

**BY ORDER OF THE COMMANDER,
RAMSTEIN (USAFE)**



**AIR FORCE INSTRUCTION
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Supplement 1**

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Maintenance

**AEROSPACE EQUIPMENT MAINTENANCE
MANAGEMENT**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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AFI 21-101, 1 October 2002 and AFI21-101 USAFESUP1, 15 May 2003 are supplemented as follows:

This supplement provides the minimum essential guidance and procedures to safely and effectively maintain, service, and repair aircraft and support equipment utilized by 86 AW personnel while operating on Ramstein Air Base. The following paragraphs, their subparagraphs, and attachments apply to Ramstein Air Base tenant units: Paragraphs **8.19.1. thru 8.19.7. (Added)** (applicable for local manufacture of aircraft parts only), **11.5.15.3. (Added)**, **13.5.1. thru 13.5.2.2.1.9. (Added)**, **18.23., 18.31.** (only for units with an Oil Analysis Program), **18.32., 18.39. (Added)**, and **18.41. (Added)** and **Attachment 12 (Added)**

and **Attachment 16 (Added)**. "Due to their contractual operating environment and geographically separated operations the 86 MMS will develop guidance specific to their WRM mission (paragraphs **13.2.1.3**, thru **13.8.1.12. (Added)**, **Attachment 10 (Added)**, and **Attachment 12 (Added)** apply." When not addressed by their MAJCOM/Unit supplements, Ramstein Air Base tenant units may utilize additional areas of this instruction. TDY units will follow this instruction when utilizing 86 AW personnel or assets. Maintain and dispose of records created by prescribed processes in accordance with Air Force Manual [AFMAN] 37-139, *Records Disposition Schedule* [will become AFMAN 33-322, Volume 4].

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This document combined 20 instructions into one supplement. Therefore, it should be reviewed in its entirety.

2.3.1.12. Refer to Chapter 11 for impoundment program.

2.3.1.14. Refer to Chapter 7 for reviewing repeat, recur, and cannot duplicate (CND) discrepancies.

2.3.1.23. Refer to Chapter 18 for specific wing oil analysis program guidance.

2.3.1.27. Approve Maintenance Assistance Request (MAR) or Technical Assistance Request (TAR) following coordination procedures. Coordination procedures are identified in **Attachment 11 (Added)**.

2.3.1.29. See Chapter 18 for specific adverse weather procedures.

2.3.1.38. Reference Chapter 18 for group procedures.

2.3.1.46. Reference Chapter 13 for tool issue and control procedures.

2.3.1.62. RABI 11-101, *Airfield Operations*, RABI 32-4001, *Base Disaster Preparedness Planning and Operations*, and Chapter 18 cover CDDAR procedures.

2.3.1.65. Chapter 18 provides guidance on individual responsibilities and specific procedures regarding cannibalizations (CANNs).

2.3.1.70. Local manufacture procedures are identified in Chapter 8 and Chapter 13.

2.3.1.75. Procedures identified in Chapter 7 will be followed for clearing repeat/recurring and cannot duplicate discrepancies.

2.5.74. (Added) Follows and ensures compliance with Incidents/Aborts/Unusual Occurrences procedures IAW Chapter 18.

2.6.55. (Added) Follows and ensures compliance with Incidents/Aborts/Unusual Occurrences procedures IAW Chapter 18.

2.7.28. (Added) Follows and ensures compliance with Incidents/Aborts/Unusual Occurrences procedures IAW Chapter 18.

2.7.29. (Added) Provide personnel, as required, to Isochronal Inspection Section (ISO) and ensure compliance with ISO procedures IAW Chapter 18.

2.8.4. Follow procedures outlined in Chapter 8 and Chapter 18 for all CANN actions.

2.8.5. Notifies MOC of /Incidents/Aborts/Unusual Occurrences identified in paragraph 3.8.4.1.

- 2.8.17. (Added) Ensure compliance with Adverse Weather procedures outlined in Chapter 18.
- 2.8.18. (Added) Follow “Red Ball” procedures IAW Chapter 18.
- 2.8.19. (Added) Follow Fuel Systems Maintenance Procedures IAW Chapter 18.
- 2.8.20. (Added) Follow ISO procedures IAW Chapter 18.
- 2.8.21. (Added) Follow Aerospace Ground Equipment Procedures IAW Chapter 18.
- 2.9.16. Reference Chapter 8 and Chapter 18 for CANN procedures.
- 2.9.23. (Added) Comply with Adverse Weather procedures outlined in Chapter 18.
- 2.9.24. (Added) Follow “Red Ball” procedures outlined in Chapter 18.
- 2.9.25. (Added) Follow Fuel Systems Maintenance Procedures IAW Chapter 18.
- 2.9.26. (Added) Follow Aerospace Ground Equipment Procedures IAW Chapter 18.
- 2.8.4.3. (Added) Document all Incidents/Aborts/Unusual Occurrences in MIS. Follow actions for Incidents/Aborts/Unusual Occurrences specified in Chapter 18. Actions requiring reporting:
 - 2.8.4.3.1. (Added) Air or ground abort.
 - 2.8.4.3.2. (Added) In-flight emergency (IFE).
 - 2.8.4.3.3. (Added) Any uncommanded chaff and flare discharge.
 - 2.8.4.3.4. (Added) Any fire or condition that causes emergency egress of aircraft.
 - 2.8.4.3.5. (Added) Lightning strike.
 - 2.8.4.3.6. (Added) Ground safety incidents, involving aircraft systems.
 - 2.8.4.3.7. (Added) Hydraulic failure of landing gear or braking capabilities.
 - 2.8.4.3.8. (Added) Dropped objects.
 - 2.8.4.3.9. (Added) Any uncommanded flight control malfunction.
 - 2.8.4.3.10. (Added) Bird strikes.
 - 2.8.4.3.11. (Added) Foreign Object Damage (FOD).
 - 2.8.4.3.12. (Added) After the occurrence of a specific or unusual condition as identified in TO 1C-130A-6 or TO 1C-9A-6.
- 3.8.18. (Added) Follow “Red Ball” procedures outlined in Chapter 18.
- 4.6.4.1.14. (Added) Ensures compliance with Fuel Systems Maintenance procedures in Chapter 18.
- 4.7.1.4.1. (Added) Equipment Custodian Responsibility/Accountability: The AGE Flight will process all AGE requisitions and equipment authorization change requests using justification provided by the using organization. Organizations must process all AGE through the AGE Flight prior to deployment to ensure proper accountability IAW AFMAN 23-110.
- 4.7.2.23. (Added) Ensures compliance with Aerospace Ground Equipment procedures in Chapter 18.
- 4.11.3.1. Troubleshoots and performs operational checks on Flight Controls.

4.11.3.1.1. (Added) Locations for Flight Control Removal/Installation. The primary location for removal and installation of flight controls will be in a hangar where the flight control affected is enclosed in the hangar and the hangar doors can be closed. **EXCEPTION:** 86 MXS Production Supervisor may approve removal/installation at other locations on a case-by-case basis.

4.11.3.1.2. (Added) Locations for Flight Control Maintenance. All flight control rigging and operational check procedures requiring stabilization without mechanical means, i.e. gustlocks and clamps, will be accomplished in a hangar, where affected flight control is enclosed. **EXCEPTION:** 86 MXS Production Supervisor may approve rigging/operational checks at other locations on a case-by-case basis provided flight control can be stabilized without mechanical means.

4.11.3.2. Perform maintenance as outlined in **Attachment 14 (Added)**.

6.1.2. See **Attachment 18 (Added)** for local radio call signs for maintenance LMR networks.

6.1.8.1. Develops and implements checklists for Incidents/Aborts/Unusual Occurrences specified in paragraph 3.8.4.1. Comply with procedures outlined in Chapter 18 for adverse weather and aircraft hangaring.

6.1.22. (Added) Notifies 86 MXG/CC/CD of impoundments and recommendations for impoundment IAW Chapter 11.

6.1.23. (Added) Follow Fuel Systems Maintenance Procedures IAW Chapter 18.

7.1.6.1. (Added) A locally developed form was created to identify and track discrepancies discovered during ISO & HSC inspections performed on 86 AW assigned C-9 and C-130 aircraft. This locally developed discrepancy sheet is known as a “gig sheet”, USAFE Form 521. QA has evaluated this form’s intent and has deemed it necessary to reduce the amount of 781 series aircraft forms used during the inspection process. As an extension of the AFTO Form 781A series aircraft forms, the gig sheets will be treated with the same respect as the AFTO Form 781A’s and will follow appropriate guidance referenced from AFI 21-101, AFI21-101_USAFESUP1, and T.O. 00-20-1. Red X’s will not be placed on these forms, they must be entered in the AFTO Form 781 A’s. The appropriate guidance will apply to only specific blocks on the gig sheet(s) and is as follows:

AIRCRAFT TAIL NUMBER	YY-####
INSPECTION AREA	Area #
DATE	<u>From</u> YYYY/MM/DD <u>To</u> YYYY/MM/DD.
SYMBOL	IAW T.O. 00-20-5, 3-11.4.7 => 3-11.4.7.1.
DISCREPANCY	IAW T.O. 00-20-5, 3-11.16.2 and 11.16.8, also AFI 21-101, 7.1.6.a. Each discrepancy entered into the gig sheets will have the “DISCOVERED BY” and “EMPLOYEE NO” annotated IAW 00-20-5, 3-11.4.17, 3-11.4.18. in the bottom right corner of discrepancy block.
CORRECTED BY	Enter minimum signature IAW T.O. 00-20-1, 2-2

CORRECTIVE ACTION	Enter a description of the corrective action. If follow-on maintenance is required, (i.e. evaluation after NDI inspection completion, or additional damage assessment) each corrective action block will include the appropriate reference for page, block and specific specialties gig sheets to which follow-on maintenance is referred.
Trans to 781 A's/K's	Do not initial over symbol. Enter the Employee # of the transcriber
PAGE __ OF __ PAGES	Enter the actual Page # and current # of Pages. Note: Discrepancies may also be transferred to other work-center gig sheets. Follow above format and indicate to which work-center the discrepancy was transferred to.

7.1.11. (Added) Depot Deferred Discrepancy (DD) and Waiver Documentation Procedures.

7.1.11.1. (Added) 86 MOS/MOF PS&D or Engine Manager will maintain all depot waivers in the aircraft jacket file.

7.1.11.2. (Added) Dedicated Crew Chief will:

7.1.11.2.1. (Added) Make an entry in the aircraft 781 series forms and MIS referencing the waiver.

7.1.11.2.2. (Added) Maintain a copy of the waiver in front of the aircraft's 781 series forms AFTO Form 781A section.

7.2.3.1. MOF PS&D will also provide an ADR checklist and Automated Records Check (ARC) to the crew chief one-day prior, if possible, to scheduled ADR. CAMS screens 700, 713, 726, 525, and 380 may be used in place of ARC. Early or late ADR must be coordinated with PS&D. PS&D will maintain the most current ADR in the aircraft jacket file until replaced by the next ADR.

7.2.3.4. Process due out deletes using CAMS screen 499. All discrepancies awaiting parts will have the correct document number loaded in CAMS.

7.2.3.5. Dedicated Crew Chief (DCC)/Assistant Dedicated Crew Chief (ADCC) will:

7.2.3.5.1. (Added) Review active AFTO Form 781-series; ensure all discrepancies have valid defer codes; annotate the ARC or CAMS products in red with all appropriate changes; ensure ADR is written up on AFTO Form 781A with the correct job control number. Additionally, DCC/ADCC will:

7.2.3.5.2. (Added) Coordinate with QA for verification of all discrepancies requiring deferment to depot prior to deferring discrepancy. See paragraph **7.1.11. (Added)** for documentation.

7.2.3.5.3. (Added) Ensure all reviewing agencies sign off ADR checklist. Return checklist and updated ARC to PS&D. Upon completion of PS&D's verification, sign off ADR JCN.

7.2.3.6. (Added) The Squadron Maintenance Operations Officer/Superintendent will perform an AFTO 781-series review and document AFTO Form 781A for aircraft departing for PDM, permanent transfer, or deployments exceeding 30 days. DCC/ADCC will ensure the ADR checklist is completed and accompanies the aircraft forms for signature.

7.2.3.7. (Added) At deployed locations where CAMS is available, ADR procedures will be accomplished as at home station. At locations without CAMS capabilities, ADRs will be accomplished using CAMS background products taken from home station. Use ARC, planning requirements (PRA), and TCTO Status Report (TSS). Production supervisor will ensure ADRs are accomplished when schedulers are not deployed.

7.4.1. These type of discrepancies also require a reference to the TO/checklist that was used to verify proper operation of the equipment in the corrective action block.

7.4.2. (Added) Repeat/Recur Procedures:

7.4.2.1. (Added) Enter in the 781A, **Maintenance Discrepancy and Work Document**, discrepancy block “Repeat” or “Recur” in red as applicable on pilot reported discrepancies (PRD). If the condition is a second or subsequent occurrence it will be identified in the discrepancy block. Use of the fault reporting guide to provide the most accurate information on a reported malfunction is highly encouraged.

7.4.2.1.1. (Added) The responsible maintenance organization will submit a Product Quality Deficiency Report (PQDR) if repeated failure is a result of a defective part issued from supply.

7.4.2.2. (Added) First Repeat/Recur:

7.4.2.2.1. (Added) Assign a highly qualified 7-level to direct all associated maintenance actions and sign the “inspected by” block of the primary discrepancy. All troubleshooting references, to include fault isolation codes if applicable, will be documented in CAMS.

7.4.2.2.2. (Added) Debrief, through technicians, will ensure repeat/recur history information is incorporated into the morning production meeting. History will include previous occurrences and corrective action along with 7-level involvement.

7.4.2.3. (Added) Second and Subsequent Repeat/Recur. In addition to procedures for first repeat/recur, applicable AMU OIC/NCOIC or Flight Commander/Flight Chief will thoroughly review previous and present discrepancies and corrective actions and ensure that the applicable Squadron Maintenance Operations Officer/Superintendent is briefed.

7.4.2.4. (Added) Repeat occurrence of an IFE, air or ground abort:

7.4.2.4.1. (Added) The AMU OIC/NCOIC or Squadron Maintenance Operations/Superintendent will consider impounding aircraft in accordance with Chapter 11.

7.4.2.4.2. (Added) Assign a highly qualified 7-level to direct all associated maintenance actions and sign the “inspected by” block of the primary discrepancy. All troubleshooting references, to include fault isolation codes if applicable, will be documented in CAMS.

7.4.2.4.3. (Added) Ensure the “inspected by” for the primary discrepancy is signed by a production supervisor, maintenance officer, AMU OIC/NCOIC, or Squadron Maintenance Operations Officer/Superintendent. **NOTE:** Must be certified to clear "RED X" for the affected system.

7.4.2.4.4. (Added) The responsible maintenance organization will submit a Product Quality Deficiency Report (PQDR) if repeated failure is a result of a defective part issued from supply.

7.4.2.4.5. (Added) The responsible maintenance organization will identify components repaired locally that are suspected of causing an IFE/abort or repeated failure in the same component position, by entering “IFE”, “Abort”, “Repeat”, or “Recur” in red as appropriate on the AFTO Form 350, **Repairable Item Processing Tag**, block 14.

7.4.2.4.6. (Added) The responsible maintenance organization will ensure locally repaired components suspected of causing repeated malfunctions are given an appropriate level of priority as determined by the shop supervisor. All components repaired locally that result in an IFE, abort, repeat, or recur condition will be identified as such on the AFTO Form 350, block 14, in red. The repairing organization will submit a PQDR if applicable. If the suspect component failure cannot be duplicated, the applicable OS or main-

tenance squadron production superintendent will be notified immediately. Components involved in IFE, abort, repeat, or recur malfunctions that have CND corrective actions will not be returned to service without the agreement of the Squadron Maintenance Supervisor/Superintendent.

7.4.2.5. (Added) 86th Maintenance Group Quality Assurance (86 MXG/QA) Responsibilities.

7.4.2.5.1. (Added) Review corrective actions taken for IFE, abort and multiple repeat/recur and pilot reported discrepancies. If major discrepancies are found, 86 MXG/QA will immediately notify the applicable AMU OIC/NCOIC, Squadron Maintenance Operations Officer/Superintendent and 86 Maintenance Group Commander (86 MXG/CC).

7.4.2.5.2. (Added) Perform a monthly review of IFE, aborts, repeat and recur for trends and problem areas.

7.5.2. (Added) Cannot Duplicate (CND) Procedures.

7.5.2.1. (Added) First CND:

7.5.2.1.1. (Added) A highly qualified 7-level will clear the symbol IAW TO 00-20-1.

7.5.2.1.2. (Added) Debrief, through technicians, will ensure CND history information is incorporated into the morning production meeting. History will include previous occurrences and corrective action.

7.5.2.2. (Added) Second and Subsequent CND. In addition to procedures for first CND, applicable AMU OIC/NCOIC or Flight Commander/Flight Chief will thoroughly review previous and present discrepancies and corrective actions and ensure that the applicable Squadron Maintenance Supervisor/Superintendent is briefed.

7.7. See [Attachment 10 \(Added\)](#) for listing of IPIs performed by 86 AW maintenance personnel. 86 AW personnel will follow applicable MAJCOM/unit guidance when working on tenant unit aircraft. When the IPIs listed in [Attachment 10 \(Added\)](#) conflict with tenant unit guidelines, tenant unit guidance will take precedence.

8.8. All aircraft TCTO kits will be stored in the aircraft TNB. Engine TCTO kits are stored in Engine Management. AGE TCTO kits are stored in the AGE TNB locker.

8.19. Local Manufacture. *NOTE:* Applicable to all Ramstein Air Base tenant units for local manufacture of aircraft parts only.

8.19.1. 86 MXS Maintenance Supervisor/Superintendent are designated as local manufacture primary and alternate monitors, respectively, and administer the local manufacture program for aircraft maintenance. In this capacity, they will serve as the approval level and authority for manufacturing of all tools and equipment covered under this instruction. All requests must be routed through 86MXG/QA office. Primary work center is the agency with the largest portion of the local manufacture process.

8.19.2. Requester must first determine if the item is procurable through normal supply channels by researching TO (using Source, Maintenance, and Recoverability (SMR) Code), Fed-Log, or local catalogs to ensure the item is not available elsewhere. If a like item is available, the customer will order it from base supply or manufacturer. For non-aeronautical mission essential local manufacture complete the USAFE Form 869, Local Manufacture Request, and follow additional procedures outlined in paragraph [13.6](#).

8.19.4. Once materials/parts necessary to complete the local manufacture are on hand, complete AFTO Form 350. Forward all documents and materials/parts for the item to be locally manufactured to the primary work center.

8.19.5. (Added) Local manufacture of aircraft parts with SMR Code of P (procurable items) is restricted to those items which the appropriate squadron Maintenance Supervisor/Superintendent determine to be mission essential, not covered in TO, and approved through the Air Force IDEA program, Item Manager (IM), structural, or system engineer.

8.19.5.1. (Added) If part/item is procurable and not available through the supply system, disposition instructions must be requested from and approved by responsible IM, structural, or system engineer prior to local manufacture.

8.19.5.2. (Added) If IM, structural, or system engineer is not available to approve local manufacture, the local manufacture request will be coordinated through responsible Maintenance Operations Officer/Superintendent and forwarded to approving authority. Use USAFE Form 869 for approval.

8.19.6. (Added) Primary Work Center Responsibilities:

8.19.6.1. (Added) Evaluate request for local manufacture and discuss feasibility of fabrication with requester. Provide reason for non-manufacture if not feasible.

8.19.6.2. (Added) Ensure all documents, information, and sample/drawings are provided by requester prior to starting work order. For local manufacture items requiring multiple section processing identify sections on AFTO Form 350.

8.19.6.3. (Added) Provide requester with estimated completion date. If materials/parts are being provided by work center, include cost of materials/parts on AF Form 2005 or DD Form 1348-6.

8.19.6.4. (Added) Notify requester of any changes to estimated completion date.

8.19.6.5. (Added) Upon completion of local manufacture, notify base supply to arrange for pickup.

8.19.7. (Added) Base Supply Responsibilities. Notify customer when work order is complete, paperwork has been processed, and item is ready for pick-up. Large items can be picked up by customer at primary work center or delivery arrangements can be made through Supply Pickup and Delivery Section.

9.6.1. (Added) WARNING: Individuals will not transit through the propeller arc unless required by specific duties.

9.6.1.1. (Added) The propeller arc is defined as the area from the outside edge of the outboard propeller to the aircraft fuselage. NEVER walk through the propeller arc when bleed air is applied to the aircraft. NEVER walk through the propeller arc unless performing mission essential duties that specifically require it (e.g. preflight, connecting/disconnecting external air, refueling operations). Prior to the performance of those duties, ensure no bleed air is on the aircraft (GTC/APU is not running, external air cart is not running when connected to the aircraft's bleed air system, or any engines are running).

9.12.3. (Added) Procedures for Warning Tag Usage:

9.12.3.1. (Added) Electrical systems shall be de-energized whenever possible. If the approved procedure requires work on an energized circuit, the sequence of steps shall be followed and other maintenance personnel informed of the actions. If the system has been de-energized, procedures will include a provision to effectively tag out the power source while work is in progress. An AF Form 1492, **Warning Tag**, authorized by AFI 21-101, will be used according to local procedures.

9.12.3.2. (Added) Each technician, when performing a task requiring use of a warning tag, will install a warning tag on affected item regardless of whether that item has been previously tagged.

9.12.3.3. (Added) Tag Documentation (Parts A and B):

9.12.3.3.1. (Added) Tag Number: JCN, including WCE, of the discrepancy for which tag is being used.

9.12.3.3.2. (Added) Date: Date tag is installed.

9.12.3.3.3. (Added) Location: Specific location where tag is to be installed, e.g. "BATTERY SWITCH".

9.12.3.3.4. (Added) Condition: Reason tag is installed.

9.12.3.3.5. (Added) Signature: Signature and employee number of person installing tag.

9.12.3.3.6. (Added) Title, Phone, Extension, Corrective Action Taken, and By: Self-explanatory.

9.12.4. (Added) Tag Installation:

9.12.4.1. (Added) Part A will be attached to item requiring deactivation/immobilization. Tags may be laminated or enclosed in see-through plastic cover.

9.12.4.2. (Added) Each 781A warning tag entry will be referenced to the discrepancy requiring use of the tag. The original entry will also reference the warning tag entry. One AFTO Form 781A entry may contain several warning tags only if they pertain to the same discrepancy. Include a warning note following the discrepancy statement for the warning tag. Each warning tag will be for a single component. Use the following as a sample entry in the forms:

2ea WARNING TAGS INSTALLED
Tag 1 of 2 installed on battery switch
Tag 2 of 2 installed on external power receptacle door
REFERENCE Pg ### Item ##
NOTE: DO NOT APPLY POWER (Written or underlined in RED)

9.12.4.3. (Added) Tag Removal. When the hazardous condition has been corrected, an individual authorized to clear Red X symbols will remove tag and sign off the write-up IAW

Technical Order 00-20-1.

10.2.16. (Added) Follows and ensures compliance with Incidents/Aborts/Unusual Occurrences procedures IAW Chapter 18.

10.6.34. Reviews depot-level assistance requests developed using AFMC Form 202.

10.7.25. (Added) Reviews depot-level assistance requests developed using AFMC Form 202.

10.15.2.1.10. (Added) Personnel completing a PQDR will adhere to the following guidelines:

10.15.2.1.10.1. (Added) Ensure a review of maintenance and historical records is accomplished and documented on DR. Contact maintenance deficiency analysis for supporting historical data, if required.

10.15.2.1.10.2. (Added) Ensure DRs are completed utilizing the Deficiency Report Entry and Mail Submitter (DREAMS) template. Upon completion of the DREAMS template e-mail it to the 86 MXG Product Improvement Manager mail box or <mailto:86mxg.qa@ramstein.af.mil>.

10.15.2.1.10.3. (Added) Ensure Category I DRs are submitted to PIM within 12 hours of discovery.

10.15.2.1.10.4. (Added) Notify PIM when exhibit is ready for review. Ensure exhibit has the following documents properly filled out and secured to the item:

10.15.2.1.10.4.1. (Added) Original DD Form 1574, **Serviceable Tag-Material** (Yellow Tag) (Depot/ Contractor) or the item identification label from the package/box.

10.15.2.1.10.4.2. (Added) Two DD Form 1575s, **Suspended Tag-Material** (Brown Tags).

10.15.2.1.10.4.3. (Added) Two DD Form 1577-2, **Unserviceable (Reparable) Tag-Material** (Green Tags).

10.15.2.1.10.4.4. (Added) One AFTO Form 350.

10.15.2.1.10.5. (Added) Ensure exhibits are placed in a DIFM "holding area" and kept in an "as is" condition. Repair of an exhibit will not be made unless approved by the PIM. Items will be secured and picked up by FSC personnel during DIFM runs, including expendable exhibits coded "XB3". Exhibits will be turned in with all applicable paperwork including, but not limited to: original DD Form 1574/item identification label, 2 DD Form 1575s, 2 DD Form 1577-2s, AFTO Form 350, 2 DD Form 2332s, and 2 copies of the report.

10.15.2.1.10.6. (Added) Ensure explosive DR exhibits under control of Munitions Accountable Supply Officer (MASO) are stored in munitions areas, segregated from serviceable stock, and readily identified as DR exhibits.

10.15.2.1.10.7. (Added) Ensure units turning in munitions items document remarks section of AF Form 2005 with "DR Exhibit", to assist in tracking.

10.15.2.2.5. (Added) Personnel submitting AFTO Form 22s will comply with the following:

10.15.2.2.5.1. (Added) All AFTO Form 22s will be submitted using the Microsoft Word template.

10.15.2.2.5.2. (Added) The submitter will complete the form and e-mail it to the section chief/assistant, flight chief/assistant or AFSC specific QA inspector for review except munitions AFTO Form 22s, which must all be routed and approved by the Munitions Flight Chief IAW 21-201.

10.15.2.2.5.3. (Added) The reviewer will in turn e-mail the form to the 86 MXG Product Improvement Manager mailbox or <mailto:86mxg.qa@ramstein.af.mil>.

10.15.2.3.5. (Added) Personnel completing Source, Maintenance, and Recoverability Code changers requests will comply with the following:

10.15.2.3.5.1. (Added) All Source, Maintenance, and Recoverability Code changes requests will be accomplished utilizing the Deficiency Report Entry and Mail Submitter (DREAMS) SMR template.

10.15.2.3.5.2. (Added) The submitter will complete the form and e-mail it to the section chief/assistant, flight chief/assistant or AFSC specific QA inspector for review except munitions SMR code change requests, which must all be routed and approved by the Munitions Flight Chief IAW 21-201.

10.15.2.3.5.3. (Added) The reviewer will in turn e-mail the form to the 86 MXG Product Improvement Manager mailbox or .

10.16.1.6. (Added) All organizations will appoint a primary and alternate Technical Order Distribution Account (TODA) monitor. Individuals appointed to these duties will be identified in writing to the TODO (see [Attachment 17 \(Added\)](#)). The TODA monitor may appoint a primary and alternate Technical Order

Distribution Sub-account (TODS) monitor for each Sub-account. Individuals appointed as a TODS will be identified in writing to the TODA monitor. These letters will contain the account number, work center, name, rank, security clearance, date assigned, DEROS, date trained, building number-, and phone number of the primary and alternate monitors. Letters will be updated when information changes.

10.16.1.7. (Added) All primary and alternate TODA and TODS monitors must complete General Technical Order Training. To enroll, get with the Unit Training Manager, submit an AETC form 325 to Sheppard AFB, and go to . All TODA and TODS monitors who use the Automated Technical Order Management System (ATOMS) will attend the advanced Air Force Technical Order Systems Course. If a TODA monitor is unable to attend the T.O. courses prior to taking over the T.O. account, the TODO monitor will train the TODA monitor on the basic knowledge required to manage the T.O. account until the training course is completed. Likewise, the TODA monitor will train their respective TODS monitors when required.

10.16.1.8. (Added) The TODO monitor will maintain a current list of the TODA monitors and the TODA monitors will maintain a current list of the TODS monitors.

10.16.1.9. (Added) All T.O. monitors receiving classified T.O.s will submit a letter of authorization to the organizations from which they receive classified mail. This letter will contain rank, name, SSAN, security clearance, and DEROS of the individuals who are authorized to sign for accountable mail. The security Manager will sign the letter.

10.16.1.10. (Added) The TODS monitors will address problems and questions to the TODA monitor. If the problem cannot be resolved at the TODA level, the TODA monitor will then address it to the TODO monitor. This will ensure TODA monitors are aware of any problems within their sub-accounts.

10.16.1.11. (Added) The TODO, TODA and TODS monitors are responsible for reviewing T.O. index 0-1-CD-1 or the Internet T.O. application at

https://wpafbres34.wpafb.af.mil/aftox/AFTOX_DOCUMENTS/index.cfm and the LCL/LWC index routinely and annually. They are also responsible for requisitioning missing T.O. increments listed in the applicable index. Routine and annual Technical Order Index checks will be annotated on the AFTO Form 131, Technical Order Index Routine and Annual Check, the ATOMS print out, or in the remarks section of the ATOMS. Only one method is authorized. Routine account records checks are performed within one month of the receipt of a T.O. Index revision on CD-ROM, once monthly when using the Internet T.O. Index Application or within one week of the receipt of the LCL/LWC Index. The account's affected T.O. records will be checked against Part I of the revised T.O. Index on the CD-ROM, or against the WWW T.O. Catalog updates (Search Changes in T.O. Status) entries in the Internet application. **NOTE:** The annual LEP check may be performed at any time during the due month until the end of that month. It is not restricted to the exact date that the previous year's check was performed.

10.16.1.12. (Added) Library custodians must check every revised CD-ROM T.O. Index (TO 0-1-CD-1), or the Internet T.O. Index Application, to determine if any newly published T.O.s are required to support the assigned mission. Library custodians will notify the servicing TODA or TODO of changed T.O. requirements.

10.16.1.13. (Added) All aircraft will have the minimum essential maintenance checklists on-board, as determined by the Squadron Maintenance Officer (SMO) or Quality Assurance Representative (QAR), to ensure safe off-station operations.

10.16.1.13.1. (Added) Units with C-130 and C-9 aircraft will develop and maintain, on the aircraft, maintenance T.O.s or job guides to ensure the safe and effective accomplishment of off-station maintenance. C-130 aircraft files will contain Fault Reporting (FR) guides.

10.16.1.14. (Added) T.O. file storage location within the aircraft shall be determined by the unit and will be consistent on all aircraft. The file total weight and any changes in location will be coordinated with the Maintenance Group quality assurance weight and balance manager.

10.16.1.15. (Added) Technical data, to include TCTOs, received by extraordinary means (i.e. E-Mail, FAX) must be verified by the TODO monitor prior to release for maintenance action.

10.16.1.16. (Added) A complete List of Effective Pages (LEP) check will be performed annually on all T.O.s/TCTOs and documented on the "A" or "Title" page as follows: "Annual LEP check c/w", along with the date and initials of the complier. When posting a new change the annual LEP c/w date and initials will be carried forward or a new annual LEP check will be conducted. If a T.O. is in a work package format and each work package is not listed on the title-A-page a LEP must be done and annotated on each individual work package.

10.16.1.17. (Added) Time Compliance Technical Orders (TCTOs) will be filed in numeric sequence in the Tech Order library. Only approved stamped copies will be used to perform TCTO's.

10.16.1.18. (Added) T.O. binders will be labeled to indicate the following contents: book number, contents of binder, office symbol and phone number.

10.16.1.19. (Added) If checklists or work cards are split into different decks, current supplements must be filed which each applicable checklist or work card deck.

10.16.1.20. (Added) Requisitions:

10.16.1.20.1. (Added) When establishing Initial Distribution (ID) for a new T.O., review the applicable T.O. index to verify status (i.e., not published, security classification, Sponsor Approval T.O.'s, etc.) prior to sub-mission.

10.16.1.20.2. (Added) Requests for Sponsor Approval T.O.s must be submitted on a separate AFTO Form 187, Automated T.O. Publication Request, or via e-mail. Written justification must also accompany the T.O. request (00-5-2, Para. 4-7).

10.16.1.20.3. (Added) Requisitions for individual T.O. changes will be submitted on AFTO Form 276, Special Requisition for Air Force Technical Orders.

10.16.1.20.4. (Added) Requests for Computer Program Identification Numbers (CPIN) will be submitted on AFTO Form 157, Computer Software Configuration Item Request.

10.16.1.20.5. (Added) Requisition follow-up actions will be initiated by the TODA monitor and the TODS monitor originally requesting the TO. This action must be accomplished 90 days from the requisition date for routine requisitions and 30 days from the requisition date for emergency requisitions. The TODA and TODS monitors must be able to show that the follow-up actions were accomplished. To verify that requisitioned items were received, line out the entry on the AFTO Form 187, or update the ATOMS automated version.

10.16.1.21. (Added) Each TODA monitor will pick up distribution at least every second duty day, classified T.O.s will be picked up the same day notified.

10.16.1.22. (Added) Messages authorizing changes to T.O.s, which are not titled as T.O. supplements, will be filed behind the basic T.O. The title page and affected paragraphs will be annotated with "see MSG <date>." Rescission of messages will be determined by the 86 MXG/QA TODO. This may be accomplished by contacting the POC or the message originator for verification of when the message has been

incorporated into the T.O. All messages will be stamped by the TODO indicating the message has been incorporated into the ATOMS system for requirement and ID purposes.

10.16.1.23. (Added) Discrepancy letters on T.O.s will be filed in a separate binder or in the T.O. continuity book.

10.16.1.24. (Added) All T.O.s will be signed out when removed from the file area or other areas in which they are normally stored. If a T.O. leaves the immediate T.O. file area, it must be returned by the end of the duty day.

10.16.1.25. (Added) When punching holes or reproducing copies, take care not to obliterate any technical data. If a problem exists, try reducing the copy size.

10.16.1.26. (Added) Procedures for use of Digital Technical Orders:

10.16.1.26.1. (Added) Review T.O. Index 0-1-CD-1 or the Internet T.O. application to determine if required T.O.s or T.O. series are available on CD-ROM or the Internet. T.O.s available on CD-ROM will be indexed using the basic T.O. number with the suffix "-CD-1". T.O.s available on the Internet will be indexed using the basic T.O. number with the suffix "-WA-1." No suffix is assigned to the paper version.

10.16.1.27.2. (Added) T.O.s and the T.O. index, that are available electronically, can be found on the T.O. homepage: <http://www.pdsm.wpafb.af.mil/toprac/to-syste.htm>. This will allow each individual account to establish an ID of the appropriate version, dependent on their equipment capabilities.

10.16.1.27.3. (Added) CD-ROM. T.O.s will be treated exactly like any other T.O. with respect to routine and annual checks. As a minimum, verify your CD-ROM with the T.O. index and annotate inspection date on the cover.

10.16.1.27.4. (Added) Compliance with USAFE and paper supplements is mandatory. Mark the top side of each CD-ROM using permanent ink with following information: office symbol, account number (F*12B2 (1712)-xxx-xxx, and phone number. A LEP check will be performed if T.O.s are printed from a CD-ROM. All rules of T.O. 00-5-1 and 00-5-2 will apply to printed versions. CD-ROMs container - The Optional Form 21 (OF 21), Cross Reference Sheet, must be used in the appropriate binder may contain several T.O.s and they may not be in sequence. Filing options: storage to show the CD-ROM sub-location. File the CD-ROM in the first applicable T.O. binder using a document protector or any other suitable protector. Use the OF 21 to cross reference from other applicable T.O. binders to the one containing the CD-ROM.

10.16.1.27.5. (Added) TODO, TODAs and TODSs using T.O.s on CD-ROM or WWW must have an OF 21 in the primary T.O. library to ensure the T.O. user is able to find the digital data (show exact URL for T.O.s available on WWW).

10.16.3.1. (Added) The TODA/TODS monitors will use either the ATOMS, or for small accounts, an ATOMS-generated T.O. inventory listing to manage their T.O. files. Any TODA monitor who redistributes T.O.s must maintain requirement and distribution records. Accounts receiving ATOMS runs will annotate any changes to their T.O. file on the run itself. This listing will be used for T.O. file inventory and annual inventory checks. The TODO or TODA monitor will provide an ATOMS listing at least every 2 months to the TODA/TODS monitor, if an ATOMS-generated T.O. inventory listing is used. This listing is required to be current since it is the automated AFTO Form 110 card. The old listing will be reconciled upon receipt of the new listing. Document any discrepancies (i.e., changes, messages, T.O.s, supplements not received, etc.) on the new ATOMS listing. These discrepancies will be returned to the TODO/TODA

monitor within 3 weeks on the appropriate forms so corrections can be made. A new ATOMS listing can be requested at any given time, not to exceed one per month.

10.16.5. Guidance For Publication and Control of Local Checklists (LCL), Local Job Workcards (LWC), and Local Page Supplements (LPS) is as follows:

10.16.5.1. (Added) The OPR will review LWCs, LJGs, LPS, and LCLs, whenever source reference data changes or at a minimum, annually. TODO will notify OPRs whenever there is a change or the product is up for annual review. OPR will check product for accuracy and the need for further use. TODO will rescind local data, using the LCL/LWC Index, **Request for Review of Publication and/or Form**, if review extends 30 days past annual review date or date notified by TODO to conduct a review. If this happens, OPR will re-coordinate local data using AF Form 673, **Request to Issue Publication**.

10.16.5.2. (Added) When initiating or making changes to local technical data.

10.16.5.2.1. (Added) OPR will:

10.16.5.2.1.1. (Added) Contact appropriate TODO for an assigned control number (i.e., LCL-86MXG-01, LWC-86OG-02, or LPS-86MXG-01):

10.16.5.2.1.1.1. (Added) Prepare a title page including at least: an assigned local T.O. number, title of local tech order, signature of group commander, date, OPR, posting instructions (if applicable).

10.16.5.2.1.1.2. (Added) Prepare a LEP that is numbered "A" and lists all affected pages and lists former changes.

10.16.5.2.1.1.3. (Added) Supporting/referring technical data must be listed on the title page or the LEP.

10.16.5.2.1.1.4. (Added) All pages of the local T.O. will be numbered with the local T.O. number.

10.16.5.2.1.2. (Added) Prepare AF Form 673 for coordination. Indicate number of copies required and for whom.

10.16.5.2.1.3. (Added) Submit draft, floppy disk, AF Form 673, and a letter of justification, signed by Flight Commander/Chief, to TODO.

10.16.5.2.2. (Added) Coordinating activities will review the proposed local technical data to determine correct content and applicability to their operation and annotate AF Form 673.

10.16.5.2.3. (Added) QA will review data for accuracy and validity.

10.16.5.3. (Added) When conducting a review and no changes have been made the OPR will submit an AF Form 1382 with OPR and Maintenance Supervision signatures to TODO.

10.16.5.4. (Added) TODO will:

10.16.5.4.1. (Added) Make a copy of original TO title page and stamp to reflect validation.

10.16.5.4.2. (Added) Update index and ATOMS and distribute local technical data to applicable accounts.

10.16.7.1. (Added) The TODA and TODS monitors will ensure they are on the weekly TODO distribution list. Subscribe via e-mail from your TODO. This is a weekly product containing a listing of all new technical orders, revisions, changes, TOPS, supplements, TCTOs and messages. The TODA/TODS monitor should check this listing for new T.O.s, TCTO's, revisions, supplements, TPs, and messages.

10.16.8.1. (Added) The TODO will perform annual inspections on all the TODAs. All accounts are subject to no-notice inspections. All failed inspections will be reevaluated within 30 days.

10.16.8.2. (Added) The TODA monitor will inspect each TODS at least annually and maintain a file of the discrepancies discovered and corrective actions taken.

10.19. Functional Check Flights

10.19.2.2.1. (Added) All 86 AW FCF aircrews will accomplish initial ground training, open book written examinations, checkout (flight), and annually (12-month) recurring open book written examinations. Exception: Those individuals who were previously qualified, in the same basic aircraft, as FCF crewmembers do not need to perform the checkout flight.

10.19.2.2.2. (Added) The unit's most qualified Stan/Eval FCF certified crewmember for the corresponding crew position should administer initial ground training and checkouts. Ground training will consist of a comprehensive briefing on procedures in AFI 21-101, T.O. 1-1-300, T.O. 00-20-1, applicable portions of AFI 11-202V3, AFI 11-2C-MDS-V3 and AFI 11-401, applicable dash-6 and dash-1 technical orders, applicable dash-6 worksheets and local FCF procedures for type of aircraft being flown. All FCFs/OCFs engine shutdowns must be approved by unit supervisors and the 86 OG/CC prior to flight.

10.19.2.2.3. (Added) The FCF written examination will be maintained by the 86 OG/OGV and administered by the squadron DOV. Passing grade on all exams is 85 percent corrected to 100 percent. Squadron DOV will maintain the results of written examinations on file until completion of the Form 116. The OGV/FCF Program Manager will rewrite and distribute a new examination annually.

10.19.2.2.4. (Added) C-130. Initial checkout for pilots and flight engineers will include a complete FCF profile. The checkout should be performed in conjunction with an actual FCF. Pilots will be selected IAW paragraph **10.19.2.2.2. (Added)** of this instruction, AFI 11-2C-130 V1, and V3. Flight engineers will be instructor qualified and will have minimum flying time prescribed in paragraph **10.19.2.2.2. (Added)** of this instruction. C-130 flying crew chief/maintenance specialist may be utilized at the recommendation of the squadron commander. Flying crew chief/maintenance specialist will be on MEGP status and may be used to observe FCFs to aid in identifying maintenance problems that only occur in-flight.

10.19.2.2.5. (Added) C-9. Initial checkout for pilots will consist of the required flying training for initial instructor checkout IAW the 375 FTS instructor pilot upgrade syllabus and AFI 11-2C-9V3. Required academic training will be given during ground training for initial IP upgrade. Pilots will have at least the minimum flight time designated in paragraph **10.19.2.2.2. (Added)** of this instruction. C-9 flying crew chiefs/maintenance specialist may be utilized at the recommendation of the squadron commander. Flying crew chiefs/maintenance specialist will be on MEGP status and may be used to observe FCFs to aid in identifying maintenance problems that only occur in-flight.

10.19.2.2.6. (Added) C-20/C-21. Initial checkout for FCF pilots and flight engineers (C-20 only) will be IAW AFI 11-2C-MDS-V3 and consist of a complete FCF profile. Due to the infrequency of actual FCFs, initial checkouts may be conducted on training flights to prevent the squadron from not having any FCF qualified pilots. Pilots and flight engineers will be instructor qualified and will have at least the minimum flight time designated in paragraph **10.19.2.2.2. (Added)** of this instruction.

10.19.2.2.7. (Added) C-37. Currently, due to the lease and maintenance support contracts for the C-37, there are no C-37 FCF crewmembers. If a C-37 FCF is required, the crews will be appointed IAW paragraph **10.19.2.6. (Added)** Initial checkout for pilots will consist of the required flying training for initial instructor checkout IAW the approved instructor pilot upgrade syllabus. Required academic training will

be given during ground training for initial IP upgrade. Pilots and Flight engineers will be instructor qualified and will have at least the minimum flight time designated in paragraph 10.19.2.2.2. (Added) of this instruction.

10.19.2.5.1. (Added) Designate FCF qualified crewmembers on the FCF Aircrew Qualification Letter, Letter of X's, and maintain a record of upgrade and annual testing on USAFE Forms 116. Updates to the Form 116 will be called into 86 OG/OGV to be transcribed.

10.19.2.5.1.1. (Added) Use the following minimum hourly criteria, including student time, to designate pilots and flight engineers to perform FCF duties:

10.19.2.5.1.1.1. (Added) 750 hours total and 200 first pilot PAA time.

10.19.2.5.1.1.2. (Added) 650 hours total and 300 first pilot PAA time.

10.19.2.5.1.1.3. (Added) 575 hours total and 400 first pilot PAA time.

10.19.2.5.1.1.4. (Added) Copilots, navigators and loadmasters require only basic mission qualification. They will be current and qualified and will have current egress and life support training.

10.19.2.6. (Added) The 86 OG/CC will issue temporary written certification designating the most highly qualified crew when a FCF is required and a FCF crew is not available. File certification letters with the 86 OG/OGV FCF program manager and OG/QA(R).

10.19.3. (Added) 86 MXG/QA (86 AMXS/MXAC for 76 AS, 309 AS/QAR and Det 3/QAR) Responsibilities.

10.19.3.1.1. (Added) Upon notification of an aircraft requiring an FCF, QA/QAR will complete the QA/FCF Briefer's Checklist, Part One. QA/QAR will determine the dash-6 required checklists.

10.19.3.1.1.1. (Added) Mission profiles will be determined during the QA/QAR (or contract maintenance personnel) briefing with the FCF crew. The dash-6 maintenance checklists required will dictate the most conducive profile for the FCF. Each unit may supplement their information files detailing procedures for recurring FCF requirements (i.e. C-130 PDM ACFs).

10.19.3.1.2. (Added) Prior to FCFs, QA or QAR (and contract maintenance personnel, if required) will meet with FCF crews and complete the QA/FCF Briefer's Checklist, Part Two. They will:

10.19.3.1.3. (Added) Conduct an AFTO Form 781-series (to include all forms since last flight).

10.19.3.4.4.1. (Added) After the FCF, QA or QAR (and contract maintenance personnel, if available) will complete the QA/FCF Briefer's Checklist, Part Three.

10.19.3.4.6.1.1. (Added) QA/QAR will review the AF Form 2400, *Functional Check Flight Log*, monthly for trends and deficient areas. Results, if any, will be forwarded to the 86 OG/OGV PM who will brief the OG/CC on trends. These trends will be sent to the unit DOV by the 86 OG/OGV PM for corrective action and they will be briefed to the Unit/CC by DOV.

10.19.4.1. (Added) FCF configuration. C-130s: Conduct FCFs in a clean configuration (i.e., without ALQ 131 pods). C-9, C-20, C-21, C-37: Standard.

10.19.7.1. (Added) FCF Release. Crews will debrief QA/QAR following all FCFs. Aircraft commanders will sign completed FCF checklists IAW TO 1-1-300 for filing in the document file of the aircraft. QA will document each discrepancy (only related to the condition generating the FCF) discovered during the FCF debrief and/or from the AFTO Forms 781A and results of the flight on the AF Form 2400, *Func-*

tional Check Flight Log, Provide a copy of this information to DOV so they can debrief the squadron commander on the FCF outcome. In case FCF results in a “Non-Release” and/or Abort, Aircraft Commander will annotate (as required) the FCF checklist and return it to QA as soon as practical.

10.19.10. (Added) Unit procedures. The 37 AS, 76 AS, and 309 AS will maintain Forms 116 for their respective FCF crewmembers. 86 OG/OGV will maintain copies of all Forms 116s to ensure continuity. Units should forward all updates to the Forms 116 to OGV. Units will conduct flights IAW T.O. 1-1-300, AFI 21-101 and AFI21-101 USAFESUP1 I. **EXCEPTION:** C-130s will conduct FCFs during daylight hours. Units will develop FCF profiles for “acceptance flights” from contractors or for PDM pick-ups and provide a copy to 86 OG/OGV PM. When a full FCF profile is not required for completion of the FCF, the profile may be modified (jointly by the crew and QA) to accomplish only the required items in the dash-6 T.O. However, only approved dash-6 procedures will be used at all times. Unit procedures will be as follows:

10.19.10.1.1. (Added) 86 AW FCF crews may perform FCFs on transient aircraft for which they are qualified with 86 OG/CC approval. QA will comply with their normal responsibilities as well as AFI 21-101 and AFI21-101 USAFESUP1 I.

10.19.10.1.2. (Added) FCF crews and QA/QAR will work closely with transient aircraft crews and the transient crews’ home station QA/QAR when establishing FCF profiles and procedures.

10.19.10.3.1. (Added) Fuel load. Fuel load for FCFs will be the minimum practical to accomplish the FCF.

10.19.10.6. (Added) ALL AIRCRAFT (C-130, C-9A, C-20H, C-21A). Dash-6 and dash-1 publication restrictions. FCFs will be performed when the adequacy of accomplished maintenance cannot be verified through ground checks. Required FCFs are specified in by aircraft in **Table 10.19.10.6.** Limited FCFs may be flown to verify specific documented discrepancies. FCFs will be conducted IAW the procedures in applicable T.O.s and AFI 11-2MDS V2 and V3. T.O. 1C-130B-6CF-1 and AFI 11-2C-130V3.

Table 10.19.10.6.

Aircraft	Regulation for Required FCFs	Flight Procedures	Other Pertinent Regulations
C-130	T.O. 1C-130A-6, Section II Part C	T.O. 1C-130B-6CF-1	AFI 11-2C-130V3
C-9A	T.O. 1C-9A-6, Section II, Part C	T.O. 1C-9A-6CF-1	AFI 11-2C-9V3
C-20H	C-20H Maintenance Planning Document (MPD), Chapter 5	T.O. 1C-20H-6CF-1	AFI 11-2C-20V3
C-21A	T.O. 1C-21A-6CF-1, Introduction	T.O. 1C-21A-6CF-1	AFI 11-2C-21V3
C-37A	See Note		

NOTE: Currently the C-37 lease contract stipulates Gulfstream will fly any system acceptance flights. If Air Force regulations require an FCF when Gulfstream procedures do not, the 86 OG/CC will designate a crew to fly it IAW paragraph **10.19.2.6. (Added)** The crew will develop flight procedures IAW the Gulfstream Operating Manuals, Maintenance Manuals, Air Force directives and technical orders.

10.19.10.7. (Added) FCF pilot upgrade program. IAW paragraph 2 of this instruction.

10.19.10.8. (Added) FCF crew currency requirements. Crewmembers will complete the annual written exam to remain current.

10.19.10.9. (Added) Expanded preflight check. Preflight checks will be in accordance with aircraft dash-1 and dash-6 T.O.s.

10.19.10.10. (Added) Ground procedures (compass swing, taxi check) will be in accordance with aircraft dash-1 and dash-6 T.O.s.

10.19.10.11. (Added) Control bailout area. C-130: Due to the variety of possible FCF locations, the aircraft commander will coordinate with ATC for an acceptable area. Every attempt will be made to avoid populated areas. When conducting FCFs in the Ramstein area, the primary egress area will be IAW RABI 11-101, *Airfield Operations*. C-9, C-20, C-21, C-37: Not applicable.

10.19.10.12. (Added) Control jettison area. When conducting FCFs in the Ramstein area, the primary jettison area will be IAW RABI 11-101, *Airfield Operations*. Outside the Ramstein area this area will be IAW FLIP.

10.19.10.13. (Added) Emergency landing base. Crews will ensure a suitable emergency landing base is available. (Consider VMC for descent when conducting actual engine shutdowns in case of a failed restart).

10.19.10.14. (Added) Unit Standards/Evaluations will ensure that Squadron Operations Supervisor (or any Top Three) is notified and available during the FCF flight.

10.19.23. (Added) FCF Scheduling and Coordination Requirements:

10.19.23.1. (Added) Units will coordinate with 86 MXG/QA or 86 AMXS/QAR to determine FCF requirements. When units determine that an FCF or OCF is to be accomplished, the 86 OG/OGV FCF Program Manager (PM) or assistant PM will be notified no later than 72 hours prior using the FCF/ACF/OCF "Official Notification" format. See [Attachment 19 \(Added\)](#). Units requiring an FCF will notify MXG QA and MOF PS&D at the 1445 production meeting. PS&D will then e-mail or fax the notification and then call 86 OG/OGV in order to confirm its receipt. If PS&D is unable to confirm receipt and/or it is after duty hours, PS&D will call the 86 AW Command Post; the Command Post will page the Group On-Call (GOC) Evaluator with a request to call PS&D. PS&D will pass on all of the information to the GOC Evaluator who will, in turn, brief the OG/CC ASAP. PS&D will notify OGV of type aircraft, tail number, date, alternate date, takeoff time, proposed duration, purpose, whether there will be FCF training, planned engine shutdowns, or high-speed taxi checks, FCF aircraft commander, flight engineer, location of FCF, location and time of 86 MXG/QA, 86 Aircraft Maintenance Squadron (AMXS) Quality Assurance Representative (QAR) or 309 AS/QAR for brief, and reason for late notification. Notifications less than 72 hours prior to flight should be restricted to valid operational requirements and/or unforeseen circumstances and will include specific reasons for its tardiness upon transmission. In addition, any timeline or profile changes (e.g. weather or maintenance slip, FCF training, or engine shutdown) require an update notification via the same process as soon as possible. The FCF/ACF/OCF "Official Notification" letter will be used for coordination. It can be found on the 86 OG/OGV web page in the policy letter section. Units will use the procedures outlined in this regulation for all FCFs, including off-station locations.

10.19.24. (Added) Mission Information Files.

10.19.24.1. (Added) Units will develop a local procedures information file (Continuity Book) to be maintained in DOV. The file will include, as a minimum, everything listed in paragraph 6 of this instruction that isn't maintained in a separate library file.

10.19.25. (Added) Aircraft Commander's Responsibilities:

10.19.25.1. (Added) In addition to normal go/no-go items, FCF aircraft commanders remain responsible prior to performing FCFs/OCFs for ensuring they and flight engineer (if required) are appropriately designated on the Letter of X's and the USAFE Forms 116 are current and copilots, navigators, and loadmasters requiring only basic mission qualification are current and qualified.

10.19.25.2. (Added) Aircraft commanders will ensure the crew is briefed IAW paragraph 4, "Unit Procedures" of this OI for their MDS and the following items:

10.19.25.2.1. (Added) ETD and time en route.

10.19.25.2.2. (Added) Mission profile to be flown based on Dash-6 procedures briefed by QA/QAR, type of airspace needed, diplomatic clearances, weather, duration of flight, etc.

10.19.25.2.3. (Added) Weather to be expected en route.

10.19.25.2.4. (Added) Aircraft weight and balance for takeoff.

10.19.25.2.5. (Added) NOTAMs and aerodrome conditions.

10.19.25.2.6. (Added) Aircraft status.

10.19.25.2.7. (Added) Aircraft servicing.

10.19.25.2.8. (Added) AFTO Form 781A entries.

10.19.25.2.9. (Added) Aircraft and engine hours.

10.19.25.2.10. (Added) Delayed discrepancies, AFTO Form 781K.

10.19.25.2.11. (Added) Calendar inspection status.

10.19.26. (Added) FCF Crew member Responsibilities:

10.19.26.1. (Added) Crews will review the following publications prior to accomplishing FCFs:

10.19.26.1.1. (Added) AFI 21-101, paragraph [10.19](#).

10.19.26.1.2. (Added) AFI21-101 USAFESUP1 I 21-101, paragraph 19.45.

10.19.26.1.3. (Added) AFI21-101 RAMSTEINSUP1.

10.19.26.1.4. (Added) T.O. 00-20-1.

10.19.26.1.5. (Added) T.O. 1-1-300.

10.19.26.1.6. (Added) Applicable dash-6.

10.19.26.1.7. (Added) AFI 11-2C-MDS-V3.

10.19.26.1.8. (Added) FCF/ACF profile procedures for the applicable aircraft.

10.19.26.1.9. (Added) Local area and/or unit specific procedures.

10.19.26.1.10. (Added) Current Go/No-Go requirements.

10.20. (Added) Local Operational Check Flight (OCF) procedures. The OG/CC and Unit/CCs will determine if an OCF is required when an FCF is not required. They will designate the most highly experienced crew available to conduct the OCF. The 86 OGV/FCF Program Manager will be notified of the proposed OCF prior to the flight. The FCF PM will review all OCFs before flight.

11.1. Aircraft Impoundment. For contract logistics support (CLS) contract aircraft, the contractor will comply with the intent of this instruction, identified appropriate supervisory levels, and contract requirements. All transient aircraft impoundments will be coordinated with QA and the 86 MXG/CC/CD.

11.3.15. (Added) Any mishap/incident that seriously affects performance, serviceability, or safety of engines and aerospace ground, test, or support equipment. Impoundment Official will coordinate with 86 AW/SE on all safety related impoundments.

11.3.16. (Added) When aircraft, aircraft systems, or equipment are suspected of being contaminated.

11.3.17. (Added) A repeat occurrence of an IFE, air or ground abort requires further investigation.

11.3.18. (Added) d) Major flight control malfunctions.

11.4.1. The impoundment official will be a Senior Non-Commissioned Officer (SNCO) or above, recommended by the Squadron Maintenance Officer/Superintendent and appointed in writing by the 86 MXG/CC or designated representative.

11.5. Impoundment process and procedures. The production superintendent or quality assurance representative (QAR) will notify MOC, AMU OIC/NCOIC, and Squadron Maintenance Officer/Superintendent of any malfunction that may warrant impoundment. The MOC will notify QA and the 86 MXG/CC or designated representative who will direct/determine impoundment and appoint an impoundment official.

11.5.1. QA or QAR inspector will:

11.5.1.1. (Added) Put a red or red bordered, "AIRCRAFT/EQUIPMENT IMPOUNDED" sign in the front of the applicable forms binder or on the equipment.

11.5.1.2. (Added) Enter a "RED X" in the aircraft/equipment forms: "Aircraft/Equipment impounded by the Maintenance Group Commander/ authorized impoundment authority for (enter discrepancy). Impoundment Official is (enter name). See page ____ block ____."

11.5.1.3. (Added) Brief impoundment official on responsibilities identified in the impoundment official briefing checklist.

11.5.1.4. (Added) Initiate UAFE Form 660, **Quality Assurance Impoundment Record**, by completing blocks 1-13 pertinent heading information on two copies. Place original in AFTO Form 781A, **Maintenance Discrepancy and Work Document**, or applicable support equipment forms, and keep duplicate as the suspense copy.

11.5.1.5. (Added) Review all aircraft /equipment maintenance forms with the impounding official for proper documentation of corrective actions and operational checks to clear the impoundment discrepancy. If corrective actions are adequate, accompany impoundment official to the 86 MXG Commander's office for impoundment release and ensure the 86 MXG/CC or designated representative signs the "Inspected By" block of the AFTO Form 781A and the "Aircraft Released" block of the USAFE Form 660.

11.5.2. Following any instance involving contamination of aircraft/equipment, the MOC will immediately notify aircraft commanders of all aircraft that have departed the base after being serviced with a "confirmed" contaminated cart.

11.5.5.4. (Added) Control all maintenance and cannibalization actions, personnel access to aircraft, forms, and jacket files. Ensure complete forms documentation of all actions associated with the impounded aircraft/equipment.

11.5.5.5. (Added) Request and assign specialists as required to troubleshoot and correct the impoundment discrepancy. For flight control malfunctions, select only highly qualified 7-level personnel that have at least one year of experience on the mission design series, and are trained in flight control Repair and Reclamation to supervise troubleshooting and fault isolation.

11.5.5.6. (Added) For flight control malfunctions, ensure continuity is maintained, throughout troubleshooting and repair, by establishing teams or specific individuals dedicated to solving the malfunction. If the problem is to be worked on multiple shifts, turnover on all work will be given orally and supported with appropriate forms documentation to include troubleshooting. Under no circumstances will personnel not specifically selected by the impoundment official perform troubleshooting or maintenance actions.

11.5.5.7. (Added) Ensure USAFE Form 660, **Quality Assurance Impoundment Record**, blocks 15-23 and 28 are completed by appropriate work centers. All troubleshooting, component adjustment or replacement, and operational checks will be thoroughly identified. If space is not available on the form, blank attachment sheets may be used.

11.5.5.8. (Added) Review all aircraft and equipment maintenance forms and USAFE Form 660 with a QA or QAR representative for proper documentation of corrective actions and operational checks prior to clearing the impoundment discrepancy. If corrective actions are adequate, enter in the corrective action block of aircraft and equipment maintenance forms "Corrective action adequate, aircraft and equipment released from impoundment IAW AFI 21-101 Ramstein sup 1," then sign the "Corrected By" block and hand-carry the maintenance forms and USAFE Form 660 to the appropriate group commander or the designated representative to have the "RED X" cleared and the impoundment released.

11.5.6.1. Ensure components sent to intermediate shops for repair are routed through appropriate repair cycle. Attach a red-bordered AFTO Form 350 with "Impoundment" clearly stated and documented with requirements, i.e. bench check.

11.5.6.2. (Added) Aircraft/equipment impounded for possible contamination will have samples analyzed by appropriate Aerospace Fuels Laboratory/agency. Aircraft equipment will remain impounded until samples are analyzed and corrective actions have been taken, if necessary.

11.5.9.1. The aircraft commander will assume the duties of the impoundment official when a Squadron Maintenance Officer/Superintendent is not deployed with the aircraft.

11.5.9.1.2. (Added) The impoundment official will, with the assistance of the aircraft crew chief, control all maintenance actions on the aircraft.

11.5.11. Once the aircraft/equipment is released, remove completed USAFE Form 660 from the forms binder and forward to aircraft/equipment historical records for filing. The QA suspense copy may be discarded. Remove aircraft/equipment impounded sign.

11.5.12. If an aircraft malfunction cannot be duplicated on the ground or if there is uncertainty whether or not the discrepancy has been conclusively repaired, an operational check flight (OCF) may be directed. The OCF will simulate as closely as possible the conditions that generated the malfunction.

11.5.13. (Added) If an engine or other removable item is identified as the cause for an aircraft impoundment, the engine or item may be removed at the discretion of the impoundment official. In such a case, release of the impounded aircraft is permitted and the impoundment will be transferred to the engine or item removed. The USAFE Form 660, **Quality Assurance Impoundment Record**, is transferred to the engine or item removed.

11.5.14. (Added) Procedures for a Lost Tool or Object.

11.5.14.1. (Added) The following procedures will be followed for impounding and releasing an aircraft as a result of a lost tool or object:

11.5.14.2. (Added) The person discovering the lost tool or object will immediately notify the production superintendent or dock chief and place a "RED X" in the AFTO Form 781A. The entry will include a complete description of the item lost, the suspected area where the item was lost, and the time.

11.5.14.3. (Added) The production superintendent or dock chief will suspend all maintenance on the affected aircraft/equipment and initiate an immediate search of the aircraft/equipment and surrounding area.

11.5.14.4. (Added) If the tool or equipment is not recovered within one hour of the time it was discovered lost, the production superintendent or dock chief if authorized will impound the aircraft and inform the MOC. The MOC will notify the 86 MXG/CC/CD and QA of the aircraft/equipment impoundment.

11.5.14.5. (Added) The production superintendent or inspection dock chief will initiate the USAFE Form 145, **Lost Tool/Object Report**.

11.5.14.6. (Added) The impoundment official will organize and ensure a thorough search is conducted for the lost item.

11.5.14.7. (Added) The impoundment official is the only person authorized to terminate the search.

11.5.14.8. (Added) If the search is terminated and the lost item has not been found the impoundment official will notify the respective QA or standby QA inspector. The QA inspector will review the search process and forms documentation and provide recommendation for impoundment release or further inspection to the impoundment official. The QA inspector will document the QA review on block 19 of USAFE Form 145 and ensure forms documentation is complete, including documentation of USAFE Forms 145 and 660.

11.5.14.9. (Added) The impoundment official will clear the "RED X" for the lost tool/object only.

11.5.14.10. (Added) If tool/object is found, the impoundment official may clear the aircraft from impoundment by verbal authority of the applicable group commander or designated representative indicate such in the corrective action block of the AFTO Form 781A and blocks 14 and 29 of USAFE Form 660. QA must be notified of intent to release.

11.5.14.11. (Added) After release from impoundment, the impoundment official will send the original USAFE Form 145 to the wing FOD manager and 86 MOS/MOF PS&D.

11.5.15. (Added) The following procedures will be followed for reporting lost tools/objects while performing maintenance on Air Mobility Command (AMC) aircraft:

11.5.15.1. (Added) The person discovering the lost tool or object will immediately notify the production superintendent or dock chief and place a "RED X" in the AFTO Form 781A. The entry will include a complete description of the item lost, the suspected area where the item was lost, and the time.

11.5.15.2. (Added) The applicable squadron production superintendent will notify the 723d Maintenance Airlift Control Center, 86 MXG/CC, and 86 MOS Maintenance Operations Center.

11.5.15.3. (Added) Applicable AMC and 723d Air Mobility Squadron procedures will be followed for clearing affected aircraft for maintenance or flight.

11.5.15.4. (Added) The following procedures will be followed while performing maintenance on CLS aircraft:

11.5.15.5. (Added) The person discovering the lost tool/object will immediately notify the QAR and place a "RED X" in the AFTO Form 781A. The entry will include a complete description of the item lost, the suspected area where the item was lost, and the time.

11.5.15.6. (Added) The QAR will suspend all maintenance on the affected aircraft/equipment and initiate an immediate search of the aircraft/equipment and surrounding area.

11.5.15.7. (Added) If the tool/object is not recovered within 1 hour of the time it was discovered lost. The QAR, if authorized will impound the aircraft and inform MOC who in turn will notify the 86 MXG/CC of the aircraft/equipment impoundment.

11.5.15.8. (Added) The QAR will initiate the USAFE Form 145, USAFE Form 660, and place a "RED X" in the aircraft/equipment forms with the entry: "Aircraft/Equipment impounded for lost tool. Impoundment Official is (enter name). See page ____ block ____ for lost tool information."

11.5.15.9. (Added) The impoundment official is the only person authorized to terminate the search.

11.5.15.10. (Added) If the search is terminated and the lost item has not been found the impoundment official will notify the respective QAR. The QAR inspector will review the search process and forms documentation and provide recommendation for impoundment release or further inspection to the impoundment official. The QAR inspector will ensure forms documentation is complete, including documentation of USAFE Forms 145 and 660.

11.5.15.11. (Added) The impoundment official will clear the "RED X" for the lost tool/object only.

11.5.15.12. (Added) The impoundment official will clear the aircraft from impoundment by verbal authority of the 86 MXG/CC or designated representative and indicate such in the corrective action block of the AFTO Form 781A and blocks 14 and 29 of USAFE Form 660.

11.5.15.13. (Added) After release from impoundment, the impoundment official will send a copy of the completed USAFE Form 145 to the wing FOD manager and send the original USAFE Form 660 to historical file with an attached copy of USAFE Form 145.

13.2.1.3. CTK's containing warranted tools fall under the same criteria as non-warranted tools as specified in this instruction. Tool Rooms/CTK Custodians will establish procedures to identify warranted tools requiring replacement and ensure tool vendor warranty guidance is followed.

13.2.1.4. All items placed in CTKs will follow tool accountability, control, and inventory requirements outlined in this instruction. Expendable, consumable, or HAZMAT items will be swapped on a one-for-one basis (i.e. containers, rolls, dull/broken blades/bits, etc. will be turned in for new items). To ensure proper accountability, expendable hand tools or equipment such as saw blades, drill bits, may be placed on bench stock, however, these tools will be signed out using TAS if available. If TAS is not available, use either an AF Form 1297 or chit system.

13.2.1.5. Transferring CTKs at the Job Site:

13.2.1.5.1. (Added) When mission dictates that work should continue uninterrupted, CTKs may be transferred at job site with production supervisor's approval (**NOTE:** AGE Support Section Chief may also approve AGE transfers). Each CTK transferred at job site will not exceed two consecutive shifts without

returning to the tool room, may be inspected at the job site by tool room personnel at the discretion of the production supervisor.

13.2.1.5.2. (Added) Both technicians involved in the transfer of CTK will complete a thorough inventory of the CTK to ensure all tools are accounted for. Production Supervisor will notify tool room of transfer approval.

13.2.1.5.3. (Added) For unforeseen circumstances when special tools are required for extended maintenance, the items may be transferred to AF Form 1297 with the Production Supervisor's approval (**NOTE:** AGE Support Section Chief may also approve AGE transfers). Each section or tool room will establish a local policy for tracking items annotated on AF Form 1297.

13.2.1.6. Procedures outlined in paragraph 13.8. will be followed for lost/missing tools.

13.2.1.7. See **Attachment 12 (Added)** for Ramstein TAS unique identifiers.

13.2.1.9. Positive accountability of rags and rag control will follow the same instructions as tools. Marking or identifying each rag with a CTK number is not necessary.

13.2.1.9.1. (Added) Rags may be issued on a one-for-one swap.

13.2.1.9.2. (Added) Rags may be issued in predetermined numbers with CTKs. Rags issued this way will be included on the CTK contents listing.

13.2.1.9.3. (Added) Rags may be issues in prepackaged containers with the number of rags marked on each container. Other locally devised accountability methods may be used.

13.2.1.10. Only CTK custodians or Government Purchase Card holders with CTK custodian approval are authorized to procure tools. Replacement tools will be secured to prevent pilferage. Only CTK custodians or designated representative can access replenishment tool stocks. A complete inventory listing of replenishment tools will be available at all times.

13.2.1.13. When two or more work centers operate from a single tool room/support section or decentralized location a primary work center will be identified. The primary work center will assume responsibility for the management of the combined/decentralized location. Each work center will still maintain custodial responsibility for their assigned equipment.

13.2.1.13.1. Equipment/tools stored in trailers or vehicles, except CDDAR equipment, will be inventoried before and after each use, using USAFE Form 140, **CTK Inventory and Control Log**. CTK custodian will also accomplish a quarterly inventory on this equipment. CDDAR equipment will be inventoried using MAJCOM directives.

13.2.1.13.2. Tools used by Life Support and aircrew personnel that dispatch to the flightline will be controlled and inventoried IAW this instruction. Aircrew members must account for all equipment and personal items after each flight and ensure that any item lost during flight is documented on the AFTO Form 781A for that particular aircraft. Aircrew members will assist maintenance personnel in searching for lost items. The Operations Officer, due to mission requirements, may waive aircrew participation in the search. Follow procedures in this instruction for lost items/tools.

13.2.1.13.3. In the event of only one person in work center to sign out and in a tool kit, the individual will notify/request a second party, or on-duty flight/production supervisor perform inventory. If a second party is not available, annotate applicable blocks of USAFE Form 140 in red. If using TAS, individual will not sign in equipment, this will indicate to the next person that a thorough inspection is required. Individual

will also identify the requirement for inventory to CTK custodian. CTK custodians or their representatives when initially logging into TAS will check for any outstanding items. Inventory will be accomplished no later than next duty day. CTK will not be issued until an inventory has been completed.

13.2.1.13.4. Any change that may have an impact on the local environment (i.e. air quality, safety and occupational health, hazardous waste disposal, etc.) will be coordinated through 86 CES/CEV.

13.3.1. An inventory will be performed on the CTK and equipment being issued prior to the requesting individual signing for the CTK, and again prior to turn-in.

13.3.1.1. (Added) The owning workcenter will account for all signed-out/issued CTKs and equipment at end of each shift.

13.3.1.2. (Added) Review all AF Form 1297, **Temporary Issue Receipt**, daily to ensure the return date has not been exceeded. If the return date is exceeded, contact the individual or individuals supervisor to verify tool location and estimated return date. The CTK representative will update the AF Form 1297.

13.3.1.3. (Added) Quality Assurance inspectors are authorized unescorted entry into CTK controlled areas to perform required inspections.

13.3.4.6. The markings and shadow location for tools no longer required will be removed and filled in with silicone compound or other suitable means to reflect the tool/item is no longer considered part of the CTK. For permanently removed tools, annotate inventory accordingly.

13.3.4.13. Authorized items (i.e., reflective belts, headsets, ear defender, etc.) will be marked with unit designator, individual's first initial, individual's last name, and last four of the social security number.

13.3.4.15. (Added) Maintenance sections needing to assign CTK and/or consumable bench stocks items to their vehicles must have a letter signed by the flight commander/chief authorizing the assignment. CTK custodian will file approval letters along with complete inventory.

13.3.4.16. (Added) All CTK keys used on the flightline will have a red streamer or high visibility item attached. Streamer or high visibility item must be marked with CTK number and annotated on ECL and permanently attached to key or key ring. Streamer must be at least 6 inches in length.

13.3.4.17. (Added) All folding knives assigned to CTKs will have a locking mechanism to prevent accidental collapse during use.

13.3.4.18. (Added) All flightline dispatchable CTKs will have a FOD pouch permanently attached. Pouch will be identified with the letters "FOD" along with CTK designator. Prior to check-in, individual who signed out the CTK is responsible for emptying the FOD pouch and ensuring CTK is FO free.

13.3.4.19. (Added) Canvas pouches may be used to transport tools to and from a CTK. Upon completion of the task, a complete inventory of the CTK will be accomplished. **NOTE:** Canvas pouches must be marked.

13.5.1. (**NOTE:** Applicable to all Ramstein Air Base units) See **Attachment 12 (Added)** for Ramstein TAS unique identifiers. Flights or functional equivalents will forward a current CTK primary/alternate custodian letter to the 86 AW FOD Manager (86MXG/QA) annually or when changes occur.

13.5.1.2. Use of Chits. When the chit system is used, it is recommended that CTK Custodians develop a system to readily identify those items which may be signed out on AF Form 1297, in PMEL, broken/removed, removed for mobility, etc.

13.5.2.1. See **13.2.1.5** for local procedures.

13.5.2.2. 86 AW maintenance units will perform an extensive inspection of all CTKs every 90 days to ensure the following requirements are complied with:

13.5.2.2.1. (Added) CTK custodians or their designated representatives will annotate the inspection on an USAFE Form 241, **Inspection Document**, or locally produced form titled "CTK Inspection Documentation." Units having TAS capability can use the database as long as required information is captured. Regardless of the form, the minimum information documented is as follows:

13.5.2.2.1.1. (Added) CTK number

13.5.2.2.1.2. (Added) Date of inspection

13.5.2.2.1.3. (Added) Type of inspection (i.e., 90-day, 180-day, change of custodian)

13.5.2.2.1.4. (Added) Last name of inspector

13.5.2.2.1.5. (Added) Date of next inspection due

13.5.2.2.1.6. (Added) Tools are etched legibly and with the correct CTK number

13.5.2.2.1.7. (Added) Ensure the Master equipment control listing (ECL), toolbox ECL, USAFE Form 146, **Missing and Removed Tool Log**, and physical inventory match and are properly documented.

13.5.2.2.1.8. (Added) CTK does not contain foreign objects or debris.

13.5.2.2.1.9. (Added) CTK items are serviceable and free from all corrosion.

13.6. 86 MXS Maintenance Operations Officer/Superintendent are designated as local manufacture primary and alternate monitors, respectively. Follow procedures outlined in paragraph 8.19. for all requests. **NOTE:** Weapons loading and weapons maintenance locally manufactured equipment will be approved by HQ USAFE/LGW.

13.8.1. In the event of losing a tool or item on a another MAJCOM's aircraft, lost tool procedures will be followed for both MAJCOMs.

13.8.1.5. QA will issue lost tool control number for annotation on USAFE Form 145, **Lost Tool/Object Report**, and input information into applicable Lost Tool database. After completion of USAFE Form 145, route copies to Wing FOD Manager and QA.

13.8.1.12. (Added) Turn all found tools or items, regardless of etchings, into a CTK custodian, tool room employee, QA, or Wing FOD Manager. CTK custodian will inform 86 MOS/MOF PS&D if a found tool/item was suspected lost on an aircraft. PS&D will then remove USAFE Form 145 from aircraft jacket file.

14.9. (Added) Procedures for Chaff/Flare Pre-load Checks.

14.9.1. (Added) The Operations Scheduler will notify the MOC when any aircraft requires chaff and flares.

14.9.2. (Added) Production Superintendent will:

14.9.2.1. (Added) Coordinate with the load team to start the chaff/flare pre-load checks at least 1 hour prior to magazine delivery time.

14.9.2.2. (Added) Coordinate with munitions flight to ensure magazines will be ready for delivery to the aircraft at the appropriate time.

14.9.3. (Added) The load team will notify the Production Superintendent when the pre-load checks are completed and the aircraft is ready to be loaded.

14.10. (Added) Procedures for Requesting, Transporting, and Uploading and Downloading Chaff/Flare Modules

14.10.1. (Added) All aircraft parking locations are authorized for uploading/downloading Airlift Defensive Systems munitions.

14.10.2. (Added) Aircraft should normally be refueled before uploading of explosives, but may be refueled afterward if explosives are safed.

14.10.3. (Added) Explosives will be transported and protected in accordance with AFMAN 91-201.

14.10.4. (Added) Drivers of vehicles transporting explosives must be certified by Wing Weapons Safety.

14.10.5. (Added) At the Production Superintendent's request, Electronic Countermeasures section will contact munitions flight and request delivery/pickup of chaff/flare magazines to the aircraft.

14.10.6. (Added) Munitions flight will contact MOC when explosives transport is started/completed.

14.10.7. (Added) MOC will notify Base Operations, the Fire Department, and Security Forces when explosives transport is started/completed. Command Post must also ensure the Fire Alarm Communications Center is made aware of the location of explosive operations and explosives-loaded aircraft on the flight line.

14.10.8. (Added) The loading team, which will consist of a minimum of two qualified technicians, will "secure" the immediate area and remain vigilant throughout the upload/download operation to ensure nonessential personnel do not enter within 50 feet of explosive operations.

14.10.8.1. (Added) PERSONNEL LIMITS: 1 Supervisor, 2 Workers, and 2 Casuals

14.10.9. (Added) The Maintenance Expediter and the load team supervisor will ensure other personnel do not refuel, LOX, operate aircraft radios, or run engines on adjacent aircraft, within 100 feet, while explosive operations are in progress. The loading team supervisor will conduct a safety briefing before starting the loading operation. As a minimum, it will contain:

14.10.9.1. (Added) Fire fighting procedures.

14.10.9.2. (Added) Evacuation procedures.

14.10.9.3. (Added) Steps to take for drop or collision of explosives

14.10.9.4. (Added) Withdrawal distances

14.10.9.5. (Added) Any specific safety requirements for the explosives being handled.

14.10.10. (Added) The following safety precautions will be strictly adhered to:

14.10.10.1. (Added) Personnel must ground themselves before handling electrically primed explosives. Frequently reaccomplish this procedure during the uploading/downloading operation.

14.10.10.2. (Added) The wear of static-producing clothing such as 100% nylon, rayon, wool, or polyester is prohibited as an outer garment. The wear of Gortex is permissible; however, do not put on or remove garments while engaged in explosive operations.

14.10.10.3. (Added) Explosives must never be carried in pockets, CTKs, or tool pouches.

- 14.10.10.4. (Added) Do not point electrically primed explosives toward yourself, others, vehicles, or the aircraft.
- 14.10.10.5. (Added) Do not tumble, drag, throw, or roll explosives or containers.
- 14.10.10.6. (Added) Disassembly of any explosive is prohibited.
- 14.10.10.7. (Added) No radio frequency transmissions of any kind will be made within 25 feet of the immediate area of explosives.
- 14.10.10.8. (Added) When uploading/downloading explosives during the hours of darkness, ensure adequate lighting of the area.
- 14.10.10.9. (Added) Discontinue all explosive uploading/downloading operations when lightning is within 5 miles or winds exceed 35 knots.
- 14.10.10.10. (Added) Do not remove explosives lot number and date of installation markings on the side of loaded magazines.
- 14.10.11. (Added) Refer to T.O. 1C-130A-33-1-2 or T.O. 1C-130A-33-1-2CL-9 for step-by-step uploading/downloading procedures.
- 14.10.12. (Added) The load team will notify the Maintenance Operation Center (MOC) that the upload/download is started.
- 14.10.13. (Added) The aircraft armament placard, AF Form 781H and AF Form 781A Info-Note, will be used to annotate the quantity and type of payload on the aircraft.
- 14.10.14. (Added) The load team will notify the MOC that the upload/download is complete.
- 14.10.15. (Added) MOC will notify base operations and the fire department when upload/download is complete.
- 14.11. (Added) Maintenance Precautions on Explosives-Loaded Aircraft.
 - 14.11.1. (Added) Aircraft are considered explosives-loaded when chaff or flares are loaded in the weapon system.
 - 14.11.2. (Added) Vehicles not directly involved with the explosives-uploading/downloading operation will remain at least 50 feet from explosives.
 - 14.11.3. (Added) The deployed commander authorizes defueling at deployed locations if considered combat essential.
 - 14.11.4. (Added) Hangaring prohibited IAW T.O. 11A-1-33.
 - 14.11.4.1. (Added) Jacking that will affect "Weight on Wheels" switch is prohibited (Aircraft must be downloaded).
 - 14.11.5. (Added) Functional Check Flights (FCFs) with explosives are performed only if the explosives are vital to the FCF.
 - 14.11.6. (Added) Maintenance that requires electrical power to the ADS equipment will not be performed until the systems are safed, both electrically and mechanically, by a qualified technician.

14.11.7. (Added) Maintenance that will increase the probability of fire, explosives release, etc. will not be performed. The Production Superintendent will determine which maintenance actions will or will not be performed on explosives-loaded aircraft.

14.11.8. (Added) If an unknown/hazardous condition is encountered, cease all maintenance, evacuate personnel to the safe distance, and notify MOC.

14.12. (Added) Procedures for Launch/Recovering and Explosives-Loaded Aircraft

14.12.1. (Added) Launch all explosive loaded aircraft as normal condition IAW AFI 11-218 Aircraft Operations and Movement on the ground.

14.12.2. (Added) As soon as inbound notification is received from an aircraft that previously launched with flares loaded, Command Post will notify munitions flight and the Production Superintendent to announce the aircraft tail number, parking location, and downtime. In addition, Command Post will remind the aircraft commander that the aircraft must be inspected for hung flares prior to proceeding to normal parking.

14.12.3. (Added) After landing, the aircraft will proceed to the hammerhead for end of runway inspections, by aircrew, for hung flares. The aircraft will not attempt to go to normal parking until it has been cleared for parking.

14.12.4. (Added) If a uncommanded release of munitions occurs:

14.12.5. (Added) Aircrew will perform all applicable hung flare checks at the hammerhead

14.12.6. (Added) If no hung flare is discovered the aircraft will taxi to normal parking when cleared to do so.

14.12.7. (Added) Upon arrival at parking spot the aircraft will be impounded until an investigation is performed by qualified Electronic Countermeasures technicians.

14.12.8. (Added) If a hung flare or unknown condition exists:

14.12.8.1. (Added) Command Post will notify EOD, Wing Weapons Safety, and Fire Department to respond to applicable aircraft.

14.12.8.2. (Added) Engines will be shut down immediately and the aircraft will be chocked.

14.12.8.3. (Added) Crew personnel will ensure ADS systems are made safe before landing.

14.12.8.4. (Added) Crew and all nonessential personnel evacuate to a safe distance determined by "Emergency Withdrawal Distances."

14.12.9. (Added) When the aircraft will fly subsequent missions requiring chaff/flare, the Production Superintendent will determine if downloading is required.

14.12.10. (Added) If downloading is required the load team will repeat steps in section 3 of this instruction immediately after the aircraft is recovered at normal parking.

15.2.2.2.1. (Added) 86 MOS Maintenance Data Analysis and the Aerospace Vehicle Distribution Officer (AVDO) will validate all accumulated flying hours/sortie utilization daily. AVDO will provide 86 MOS Maintenance Data Analysis with an Aircraft Utilization Report (AUR) (option B) within one duty day after completion of flying day. 86 MOS Maintenance Data Analysis will compare AURB to AFTO Form 781s. AFTO Form 781 is the source document and CAMS will be corrected to match. 86 MOS Maintenance Data Analysis will notify applicable AMU Debriefing Section if corrections are required and anno-

tate AURB in red. AVDO will keep daily AURB on file until the monthly AURB is verified and agreed upon by 86 MOS Maintenance Data Analysis and AVDO.

15.2.2.2.2. (Added) Monthly Validation: All previous month's accumulated flying hours/sortie utilization will be validated monthly by 86 MOS Maintenance Data Analysis and AVDO using CAMS AUR (option C). Once validated, 86 MOS Maintenance Data Analysis will sign last page of AURC and annotate date and time the verification was completed. The verified monthly AURC will be sent to the AVDO for higher headquarters reporting and filing.

15.2.3.1.1. (Added) Maintain up-to-date CAMS hard-copy backup products. These products should be manually updated in red ink with current information as it occurs. Verify manual updates against new product updates. Ensure CAMS has the correct information. If CAMS is not showing current data, transcribe all red ink manual write-in updates to new products prior to ensuring CAMS updates were made. Old products will not be destroyed or discarded until new ones are received.

15.2.3.1.2. (Added) As a minimum maintain Planning Requirements (PRA), Workable TCTO Report (WTR), TCTO status summary (TSS), TCTO index listing (TIL), job master listing (JML), and aircraft utilization reports (AUR). All products will be run weekly, except AURs will be run daily and TSSs and JMLs monthly.

15.2.3.4. See Chapter 7 for ADR procedures.

15.2.3.5.1. (Added) Pre-dock meetings will be held no earlier than one duty day prior to ISO wash. PS&D will schedule an ADR prior to pre-dock meeting. ADR will be completed prior to pre-dock.

15.2.3.5.2. (Added) 86 MOS/MOF PS&D will schedule and chair Pre/Post-dock Isochronal (ISO) and Transfer meetings and will notify all required attendees. The following personnel, or designated representative, will attend:

PS&D	Fuel Cell
Dedicated or Assistant Crew Chief	
Specialist Section Chief	Life Support (Transfer only)
Inspection Section Chief/Controller (ISO only)	Sheet Metal (ISO Only)
AMXS Production Supervisor	A/R (ISO Only)
TSE or Supply Equivalent (Transfer only)	Engine Management
MXS Production Supervisor	Dash 21 (Transfer only)
Electro-Environmental Specialist	Hydraulics Specialist

15.2.3.5.3. (Added) During ISO pre-dock.

15.2.3.5.3.1. (Added) PS&D will give Part Number/Serial Number verification sheets for AFTO Form 95-tracked items and Time Change Items to Inspection Section for compliance.

15.2.3.5.3.2. (Added) Document any additional items to be accomplished while in ISO. These items will be added to AF Form 2410.

15.2.3.5.3.3. (Added) Inspection Section Chief will review AF Form 2410 and aircraft forms. Discrepancies annotated on AF Form 2410 and work to be accomplished will be agreed upon by all agencies prior to meeting conclusion.

15.2.3.5.4. (Added) Prior to ISO post-dock.

15.2.3.5.4.1. (Added) Inspection Section will: Verify completion of inspection requirements and transcribe open discrepancies into AFTO Form 781-series; change delivery destination for backordered parts; defer all discrepancies in CAMS that were identified but not accomplished; notify QA for verification of new discrepancies identified as awaiting depot maintenance (ADM); ensure inspection requirements are completed in CAMS.

15.2.3.5.5. (Added) During ISO post-dock.

15.2.3.5.5.1. (Added) Inspection Section will turn in Part Number/Serial Number verification sheets to PS&D.

15.2.3.5.5.2. (Added) PS&D will annotate AF Form 2410 with reason why any scheduled inspections could not be accomplished.

15.2.3.5.6. (Added) After post-dock an ADR will be accomplished.

15.2.4.5. (Added) Ensure basic JSTs for single occurrence inspections, those accomplished only once at a specified interval, have an automatic update indicator of "N".

15.2.4.6. (Added) Ensure aircraft/equipment are deleted from non-recurring inspection JSTs once inspections are complied with (i.e. PDM extensions, annotate completion date on automated AFTO Form 95).

15.2.4.7. (Added) Applicable AMU Dash-21 personnel will ensure 180-day escape slides inspections are updated in CAMS prior to equipment returning to service.

15.3.5.2. Aircraft deployed for 30 days or more will deploy with a temporary historical jacket file consisting of the following: copies of all AFTO Form 95s, current CAMS Automated History (AHE), copy of fuel cell records, copy of engine records, and one month of most recent pulled AFTO Form 781-series forms.

15.11.2. Follow routing procedures outlined in [Attachment 11 \(Added\)](#) for wing depot-level assistance requests developed IAW 00-25-107 and those using AFMC Form 202.

15.12.2.2.2. TCTO planning meeting will not start until all required personnel are present. If TCTO is not workable another meeting will be scheduled once it becomes workable.

15.12.2.2.11. (Added) Commodity TCTO Management: In addition to normal TCTO procedures, when a commodity TCTO is workable TCTO monitor and performing work center will establish an estimated completion date (ECD). At midpoint, TCTO monitor will review TCTO progress. Results will be sent to performing work centers, squadron supervision, and QA. QA will investigate slow progression for possible technical difficulties.

15.12.2.4.9. (Added) Coordinate with appropriate TCTO monitor upon completion of TCTO on disposition of excess TCTO supply assets. If assets are not returned to supply, work centers will place parts into operational stock.

15.12.2.4.10. (Added) Ensure PIM is informed of all modification proposals and One-Time Inspections for proper coordination. Ensure PIM is updated on results of proposals/inspections.

15.12.2.5. (Added) MOC will notify PIM or wing TODO of urgent, immediate, or safety inspections that arrive after duty hours or on weekends/holidays.

15.13.1.1. When verifying CAD/PAD date of manufacture (DOM) use printed DOM on item. If no DOM is provided, then extract DOM from lot number.

15.13.2.2. Upgrade urgency justification code to 02/AU 16 days prior to TCI grounding date. After priority is upgraded, 86 MOS/MOF PS&D will notify TSE and request Transportation Control Number (TCN).

15.13.2.4. Remove AFTO 2005 from suspense file, load new item to JST, and delete old item and its JST from CAMS.

15.13.2.5. Life Support will order TCI for harness and survival vests. Survival Equipment Section will order TCI for life preservers.

15.13.2.7. File one copy of extension approval in aircraft jacket file and maintain one copy.

15.13.2.10. (Added) Provide verification worksheets for accomplishment during acceptance inspection, annual record review, and ISO. Review for accuracy and ensure items are installed IAW applicable configuration tables in CAMS. File worksheets in aircraft jacket file.

15.13.3. (Added) Performing work centers will: Initialize and document compliance of new item in CAMS; ensure proper work-unit and action-taken code are utilized (P, Q, R, S, T, U). **NOTE:** Inputting wrong codes will fail to trigger a suspense validation notification and reflect old item remaining installed on-equipment in CAMS.

15.13.4. (Added) Out of cycle replacement time changes will be documented in CAMS by performing work center using screen 54 and procedures in paragraph **15.13.3. (Added)**

15.15.1.1. The MIS JST will be used as the transfer and acceptance checklist.

15.15.1.3. (Added) PS&D will change possession purpose identifier to BT on the first day of transfer upon notification from the production supervisor.

15.15.2.1. Prepare AF Form 2410 in duplicate, one copy to be held by PS&D and one for transfer inspection supervisor.

15.15.2.2. To include Part Number/Serial Number verification sheets for AFTO Form 95-tracked items.

15.15.2.5. Ensure AF Form 2410 for the post-dock is filed in the aircraft jacket file.

15.15.3.1. Aircraft Acceptance Inspection (except for aircraft returning from Depot Modification, other than PDM).

15.15.3.1.1. (Added) 86MOS/MOF PS&D will:

15.15.3.1.1.1. (Added) Notify QA and MOC.

15.15.3.1.1.2. (Added) Schedule aircraft down time IAW AFI 21-103.

15.15.3.1.2. (Added) Acceptance inspection work flow will be as follows:

15.15.3.1.2.1. (Added) Acceptance inspection will normally begin the first duty day following aircraft arrival.

15.15.3.1.2.2. (Added) QA and 86 MOS/MOF PS&D will complete JST items.

15.15.3.1.2.3. (Added) Applicable AMU will complete JST items.

15.15.3.1.2.4. (Added) Applicable AMU Support Section will complete JST items.

15.15.3.1.2.5. (Added) 86 MXS, applicable work centers, will complete JST items.

15.15.3.1.2.6. (Added) Applicable Life Support Section will complete JST items.

15.15.3.2. Aircraft Acceptance Inspection: (Aircraft returning from Depot Modification, other than PDM).

15.15.3.2.1. (Added) An acceptance inspection planning meeting, chaired by 86 MOS/MOF PS&D, will be held prior to aircraft arrival. Attendees will consist of the following: QA, Wing Product Improvement Manager (PIM), applicable squadron supervisions, and specific work centers involved in the modification. The goal will be to identify specific items to be accomplished as part of the acceptance inspection. QA will provide information concerning the particular modification (i.e., work specifications, contract requirements, and additional USAFE requirements). PS&D will enter specific items agreed to as an acceptance inspection requirement into the JST.

15.15.3.2.2. (Added) After aircraft arrival, additional acceptance inspection requirements identified will be coordinated with QA and sent to 86 MOS/MOF PS&D for inclusion in the JST.

15.15.5. (Added) Aircraft Transfer Inspection. All items will be accomplished NLT two days prior to transfer, except for transfer post-dock which will be accomplished the day prior to transfer. Appropriate work centers will sign off delayed discrepancies with the following statement: "Aircraft transferred with open write-up".

15.15.5.1. (Added) Squadron Maintenance Operations Officer/Superintendent will assign a transfer inspection supervisor and ensure aircraft is held down for sufficient time to complete inspection.

15.15.5.2. (Added) Transfer inspection supervisor will ensure all items identified on AF Form 2410 are completed and signed off in CAMS.

15.15.5.2.1. (Added) 86 MOS/MOF PS&D will: Complete JST items; process CAMS screen 395 and ensure all special inspections and TCIs are deleted; ensure all delayed discrepancies are signed off in CAMS.

15.15.5.2.2. (Added) QA will complete JST items.

15.15.5.3. (Added) Applicable AMU will complete JST items.

15.15.5.4. (Added) Applicable AMU Support Section will complete JST items.

15.15.5.5. (Added) 86 MXS, applicable work centers, will complete JST items.

15.15.5.6. (Added) Applicable Life Support Section will complete JST items.

15.16. (Added) Manual Job Control Numbers (JCN). All activities within the 86 AW having inspections, maintenance requirements, or responsibilities on aircraft and related equipment will assign and control their block of JCNs. All supervisors are responsible for ensuring the use of manual JCNs when CAMS is down.

15.16.1. (Added) Policy. Maintenance is not performed without an authorized JCN.

15.16.2. (Added) All manual JCNs will be entered into CAMS within one duty day after CAMS is returned to operational status. Each work center will ensure completed manual JCNs are still entered into CAMS.

15.16.2.1. (Added) The 86 MOS/MOF PS&D will assign a block of four digit sequence numbers by workcenter for use in manually constructing event IDs. PS&D will also assign blocks of three digit

sequence numbers for those workcenters performing fix phase maintenance in accordance with T.O. 00-20-2, paragraph. 4-2.3.3.

15.16.2.2. (Added) All manually assigned events will have the last two positions of the current year, the three position Julian date and will end with a high enough four digit sequence number to prevent interference with automatic assignment of event IDs once normal processing resumes, for example, 950604000.

15.16.2.3. (Added) Look Phase documentation cannot be accomplished with a manually assigned event ID.

15.16.2.4. (Added) Fix phase event IDs will continue in a logical sequence for either manual or automatic assignment. The ISO dock or Aerospace Ground Equipment (AGE) coordinator will assign fix-phase event IDs in a logical sequence from the last automatically assigned number for in-progress inspections. For inspections beginning while the computer is off-line, the first fix-phase sequence number will be the first logical number after the look-phase event ID. Event IDs for Isochronal (ISO) and Phase inspections will always contain an alpha character in the sixth position, which describes the inspection performed. The unique sixth digit assignment is further explained in T.O. 00-20-2, figure 4-1.

15.16.2.5. (Added) Work centers will utilize either AF Form 1530 or AFTO Form 349 to track data collection information for input when CAMS returns to on-line processing.

15.16.3. (Added) **Attachment 15 (Added)** lists assigned blocks of manual job control numbers for organizations using CAMS.

18.5.13. Responsibilities:

18.5.13.1. (Added) The 86 AMXS Maintenance Operations Officer/Maintenance Superintendent will:

18.5.13.1.1. (Added) Approve CANNs to repair transient aircraft with 86 MXG/CC approval.

18.5.13.1.2. (Added) Approve CANNs to repair Delta Squadron aircraft.

18.5.13.1.3. (Added) Select appropriate aircraft from which to CANN.

18.5.13.2. (Added) The 86 AMXS Production Supervisor will:

18.5.13.2.1. (Added) Coordinate CANNs from spare T-56 turboprop engines with Engine Management Section.

18.5.13.2.2. (Added) Determine the appropriateness of a cannibalization action, and approves CANNs for 86 AW possessed aircraft. **EXCEPTION:** CANNs from Isochronal Inspection aircraft will be coordinated through the 86 MXS Production Supervisor. Careful consideration must be given to the impact of the CANN on the ISO process.

18.5.13.2.3. (Added) Ensure Maintenance Supply Support personnel confirm a valid MICAP document exists for any CANN request originating from outside 86 AMXS.

18.5.13.2.3.1. (Added) Applicable AMU Debriefing Section may issue CANN JCNs during hours that MSS is not manned. All involvement with CANN actions performed by Debriefing Section will be logged and passed on to MSS to follow up on.

18.5.13.2.4. (Added) Maintain CANN log of all CANN actions associated with 86 AW possessed aircraft.

18.5.13.2.5. (Added) Call all CANN actions into Regional Supply Squadron (RSS) MICAP section and ensure document number in Standard Base Supply System (SBSS) reflects correct tail number.

18.5.13.2.6. (Added) Print out CAMS screens 499 and 122 and give to flightline expediter.

18.5.13.2.7. (Added) Inform 86 MOS/MOF PS&D of the selected CANN aircraft.

18.5.13.3. (Added) The 86 MXS Production Supervisor will:

18.5.13.3.1. (Added) Approve CANNs from 86 MXS equipment or components except for AGE. See Chapter 4 for AGE CANNs.

18.5.13.3.2. (Added) Monitor/supervise the maintenance necessary to perform CANN action and ensure appropriate forms and CAMS have been updated.

18.5.13.3.3. (Added) Inform 86 MXS Maintenance Supervision and affected flight chief of all CANN actions that occurred on their shift.

18.5.13.4. (Added) MSS will:

18.5.13.4.1. (Added) Initiate and reconcile CANN actions in CAMS, as requested by the Production Supervisor.

18.5.13.4.1.1. (Added) Applicable AMU Debriefing Section may issue CANN JCNs during hours that MSS is not manned. All involvement with CANN actions performed by Debriefing Section will be logged and passed on to MSS to follow up on.

18.5.13.4.2. (Added) Maintain CANN log of all CANN actions associated with 86 AW possessed aircraft.

18.5.13.4.3. (Added) Call all CANN actions into Regional Supply Squadron (RSS) MICAP section and ensure document number in Standard Base Supply System (SBSS) reflects correct tail number.

18.5.13.4.4. (Added) Print out CAMS screens 499 and 122 and give to flightline expediter.

18.5.13.5. (Added) Flightline Expediter will verify CAMS screen 499 and 122 information is accurate and matches aircraft forms. The printout will be signed by the Expediter and returned to TSE to complete CANN removal action.

18.5.14. (Added) Procedures:

18.5.14.1. (Added) CANNs for 86 AW possessed aircraft:

18.5.14.1.1. (Added) Flightline maintenance personnel will order parts through MSS. If parts are unavailable, all alternate parts numbers and suitable substitutes must be researched and exhausted.

18.5.14.1.2. (Added) Flightline maintenance personnel will load supply document request information on CAMS screen 72.

18.5.14.1.3. (Added) Production Supervisor will verify MICAP priority with MSS. Production Supervisor will then direct MSS to process CANN action and issue a CANN JCN to flightline personnel.

18.5.14.1.4. (Added) Flightline maintenance personnel will ensure original discrepancy JCN is not completed in CAMS until CANN JCN is loaded. **NOTE:** The CANN job cannot be properly loaded if the original job is previously completed in CAMS.

18.5.14.2. (Added) CANNs from 86 AW possessed aircraft to non-86 AW possessed aircraft: (**NOTE:** Applicable to all units requesting CANNs from 86 AW aircraft).

18.5.14.2.1. (Added) Applicable organization will request CANNs through applicable AMU Production Supervisor, who will in turn notify 86 AMXS Maintenance Operations Officer/Superintendent. 86 AMXS Maintenance Operations/Superintendent will request CANN approval from 86 MXG/CC.

18.5.14.2.2. (Added) For transient aircraft, applicable organization will create CAMS JCN.

18.5.14.2.3. (Added) Applicable organization will load supply order request information via CAMS screen 72.

18.5.14.2.4. (Added) Applicable organization will provide MSS with JCN and supply document number so MSS can issue CANN JCN.

18.5.14.2.5. (Added) Flightline maintenance personnel will ensure original discrepancy JCN is not completed in CAMS until CANN JCN is loaded. **NOTE:** CANN job cannot be properly loaded if the original job is previously completed in CAMS.

18.5.14.2.6. (Added) When part issues, applicable organization will coordinate with applicable AMU Production Supervisor to install part on CANN aircraft.

18.20.2.3. (Added) In the event of a red ball malfunction:

18.20.2.3.1. (Added) The AMU crew chief or maintenance personnel performing launch procedures will, if necessary, use the radio or aircraft anti-collision light to notify or signal the AMU Flightline Expediter or AMU Production Supervisor.

18.20.2.3.2. (Added) The AMU Flightline Expediter or AMU Production Supervisor will notify the MOC and AMU Debrief of the malfunction and coordinate specialist support.

18.20.2.3.3. (Added) The will notify 86 MXS Production Supervisor (radio or telephone) for RR, Fuels, or SM if support is required. If unable to contact the 86 MXS Production Supervisor, notify the RR, Fuels, or SM specialists directly. The MOC and the dispatched specialist will brief the situation to the 86 MXS Production Supervisor when communication is reestablished.

18.20.2.3.4. (Added) Applicable AMU Debrief will enter the discrepancy in Core Automated Maintenance System (CAMS) and report the job control number (JCN) to the AMU Flightline Expediter or AMU Production Supervisor.

18.20.2.3.5. (Added) The applicable AMU Flightline Expediter will provide the JCN to crew chief or launch personnel.

18.20.2.3.6. (Added) The applicable AMU Flightline Expediter will order parts, when applicable, from the quick reference list.

18.20.2.3.7. (Added) The AMU crew chief or launch personnel will monitor the progress of the maintenance action, assist as necessary, keep the AMU Flightline Expediter or AMU Production Supervisor informed as required, and will ensure all forms documentation is complete.

18.20.2.3.8. (Added) The AMU Flightline Expediter will relay corrective actions and employee numbers to debrief.

18.20.2.3.9. (Added) Debrief will enter corrective actions into CAMS prior to flight.

18.23. Foreign Object Damage. **NOTE:** The following paragraphs and their subparagraphs are applicable to all Ramstein Air Base Units: **18.23.2.11.**, 18.23.2.12., **18.23.2.20.**, **18.23.2.7.1. (Added)**, **18.23.8.**, **18.23.10.**

18.23.2.1. Do not leave any checklists, hardware, fasteners, safety wire, or any other FOD lying on or in any portion of the aircraft, engine intakes, ramp, taxiways, floors, tool kits, vehicles, or any part of powered/non-powered aerospace ground equipment (AGE). Dispose of FOD in a proper container.

18.23.2.3. Prior to engine start for flight/after flight each engine intake and exhaust will receive a FOD inspection. Debrief Section will ensure appropriate post and before flight inspections are entered in AFTO Form 781A.

18.23.2.4. Inlet duct and throttle covers should remain installed as close to crew show as possible, except when aircraft engines are operating or when maintenance/inspections are being accomplished in the intake.

18.23.2.4.1. (Added) After performing maintenance or inspection and prior to leaving aircraft, ensure all openings, inlets, ports, lines, hoses, uninstalled engines, electrical connectors, etc. are properly plugged or capped to prevent any foreign objects from entering the systems.

18.23.2.7.1. (Added) Government vehicles normally driven on the flight line will carry a self-closing lid-type container (for example: NSN 7240-00-634-0001 or NSN 7240-00-256-7700). Aerospace ground equipment (AGE) tractors, tow vehicles, tugs, and vehicles that can not be fitted with a container, will have a locally manufactured receptacle, prevention pouch or bag attached inside or outside of the vehicle. All FOD prevention containers/receptacles will be stenciled or painted with the letters "FOD" on the container.

18.23.2.8. Dispose of any unserviceable hardware through squadron "Waste Busters" or other programs that encourage disposal through Air Force Recycling Program.

18.23.2.10. The AF Form 1199, **USAF Restricted Area Badge** will be secured to the uniform or the person with a nylon-cotton cord at all times. The metal clip may be used in addition to the cord to keep the AF Form 1199 out of the way. Do not use dog tags chains to secure the AF Form 1199 in lieu of a durable cord assembly. The plastic armband (NSN 8415-P500-706-4801) can be used in place of the nylon-cotton cord. Outside the restricted area, the armband will be stowed so that it is not visible when wearing the uniform.

18.23.2.11. FOD Walk Guidelines for Ramstein Air Base are as follows:

18.23.2.11.1. (Added) Mandatory FOD walks will be conducted three times per week (Monday, Wednesday and Friday) and when deemed necessary by the Wing FOD manager. Walks will be conducted within 1st four hours of the flying window.

18.23.2.11.2. (Added) Each squadron, AMU, flight, or shop is responsible for specific FOD walk areas. This includes areas immediately surrounding buildings and taxiways. A supervisor in charge will ensure an adequate number of personnel are available to conduct a thorough FOD prevention walk. Production superintendents have overall responsibility for completeness of FOD walks in their respective units. They can also postpone FOD walks to meet workload demands until later that day, but they will be accomplished. Maximum participation is essential for an effective program.

18.23.2.11.2. (Added) Areas or responsibility are as follows:

Table 18.2 (Added) FOD Walk Assigned Areas of Responsibilities.

37 AMU	Ramp 1; Ramp 2, Spots 1 - 5
76 AMU	Ramp 4; Ramp 7
86 MXS	Ramp 2, Spots 6 - 12; Ramp 3; Ramp 6; Taxiway E
723 AMS	Ramp 5; Ramp 5A

18.23.2.11.4. (Added) Maintenance personnel will perform a FOD walk around aircraft parking spots prior to engine starts and marshalling aircraft in and out, after engine maintenance runs, and after any engine and aircraft maintenance.

18.23.2.12.1. (Added) All flight line areas are designated as no-hat areas. These areas are inside the fence lines of the northeast, southeast, and southwest areas, all ramps, taxiways, and end-of-runway areas.

18.23.2.12.2. (Added) During exercises, do not wear helmets within 50 feet of operating aircraft engines.

18.23.2.12.3. (Added) During cold weather, the winter stocking cap, and flyer's helmet (bunny cap) are authorized to be worn in no-hat areas. However, remain alert to operating engines.

18.23.2.12.4. (Added) Exposed detachable hoods of jackets, field jackets, parkas, and rain coats must be tucked into the back of the apparel and must stay clear of operating aircraft engine danger areas at all times.

18.23.2.14. Authorized items (i.e. reflective belts, headsets, ear defender, etc.) will be marked with unit designator, individual's last name, and last four of the social security number.

18.23.2.20. To reduce FOD potential, all vehicle operators will perform a foreign object inspection at all established check points and prior to entry on taxiways and aircraft parking ramps ensuring that vehicle tires are free of stones, trash or loose objects that could cause FOD. Vehicle operators that leave the hard surface of the ramp area for any reason will be required to check the tires prior to reentering the hard surface.

18.23.2.24. (Added) Pintle hooks will be in the fully open or closed position, and the pin installed at all times. The pin will be secured by chain or cable (Reference: T.O. 36-1-121).

18.23.2.25. (Added) Hangars and back shops will remain FOD free. The organization that uses the hangar will be responsible for ensuring it is FOD free. The organization performing maintenance in a hangar will accomplish a FOD walk immediately following the removal of the aircraft.

18.23.2.26. (Added) When panels are removed/opened (including scheduled inspections), the area will be checked for FOD during maintenance and prior to panel installation.

18.23.2.27. (Added) All fire extinguishers on the flight line, in hangars, or on vehicles used on the flight line, will have a FOD lanyard attaching the pull pin to it.

18.23.7.3. (Added) Squadron FOD Program.

18.23.7.3.1. (Added) Squadron commanders will be responsible for developing and maintaining a viable unit FOD awareness program. Squadron commander will designate in writing a primary and alternate squadron FOD monitor in the rank of E-5 or above. A copy of this will be forwarded to the wing FOD monitor.

18.23.7.3.2. (Added) Squadron FOD monitors will at a minimum:

- 18.23.7.3.2.1. (Added) Develop a FOD prevention checklist covering their areas of responsibility.
- 18.23.7.3.2.2. (Added) Ensure all personnel within their unit, branch, or shop are briefed on the importance of FOD prevention bi-weekly. This can be done during unit, flight, or shop safety briefings.
- 18.23.7.3.2.3. (Added) Ensure all work areas, shops, hangars, and surrounding areas of responsibility are free of foreign objects.
- 18.23.7.3.2.4. (Added) Submit and nominate individuals who have demonstrated a genuine concern toward FOD prevention for quarterly FOD prevention awards and FOD poster awards.
- 18.23.7.3.2.5. (Added) Support the FOD prevention committee's initiatives and recommendations to prevent FOD.
- 18.23.7.3.2.6. (Added) Attend FOD prevention committee meetings.
- 18.23.7.3.2.7. (Added) Occasionally assist the wing FOD Monitor during spot inspections (i.e. FOD walk follow-ups).
- 18.23.7.3.2.8. (Added) Establish a FOD prevention folder with the following information as a minimum.
 - 18.23.7.3.2.8.1. (Added) Tab A: Copy of unit's FOD prevention checklist.
 - 18.23.7.3.2.8.2. (Added) Tab B: FOD prevention committee meeting minutes.
 - 18.23.7.3.2.8.3. (Added) Tab C: Documentation of FOD prevention briefings given (i.e. commander's call, roll call, safety briefing) to unit/work center personnel.
- 18.23.7.4. (Added) FOD Bulletin Boards.
 - 18.23.7.4.1. (Added) FOD bulletin boards will be maintained and kept current. They will contain, as a minimum, current meeting minutes and FOD poster of the quarter. Placement of the bulletin board is at the discretion of the concerned facility manager. FOD bulletin boards will be located to afford the greatest visibility to shop personnel. Multiple work centers within a small facility may share a common bulletin board.
 - 18.23.7.4.2. (Added) The following facilities will have a FOD bulletin board:
 - 18.23.7.4.2.1. (Added) Each squadron maintenance facility.
 - 18.23.7.4.2.2. (Added) Each Maintenance Group flight that performs on/off equipment maintenance. There will only be one board per building.
 - 18.23.7.4.2.3. (Added) Base Civil Engineering flights and sections that operate on the flightline.
 - 18.23.7.4.2.4. (Added) Security Forces Squadron flights that patrol the flight line.
 - 18.23.7.4.2.5. (Added) Logistics Readiness Squadron flights and sections that operate on the flightline.
- 18.23.8. The wing FOD Monitor will also monitor the Dropped Object program, and will investigate all foreign object damage/dropped object incidents, and will report incidents directly to the 86 AW/CV.
- 18.23.8.3. The FOD prevention manager will investigate and analyze all FOD related mishap reports, identify FOD problem areas, and recommend solutions to affected units and the 86 AW/CV.
- 18.23.8.4. Additionally, the FOD prevention manager will assist unit FOD/DOP monitors to establish squadron FOD training programs.

18.23.8.7. The FOD prevention manager will conduct wing FOD prevention committee meetings and publish minutes for distribution.

18.23.8.8. Local FOD Prevention Awards Program:

18.23.8.8.1. (Added) All awards are subject to change due to availability of prizes and sponsors.

18.23.8.8.2. (Added) The wing CV and FOD monitor selects all winners. Ties will be resolved by reviewing past data to determine the best overall record for FOD individuals and FOD squadrons.

18.23.8.8.3. (Added) FOD Prevention Individual of the Quarter is awarded to individuals who go above and beyond their duties to prevent FOD incidents. FOD Prevention Individual of the Quarter nominations will be submitted by letter to the wing FOD monitor. Nominations will contain full name, rank, unit, office symbol, and duty phone number. All nominations will be submitted not later than the last day of the last month for that quarter.

18.23.8.8.3.1. (Added) FOD Prevention Individual of the Quarter winner will receive: an engraved plaque, a 1-day pass, a certificate of achievement.

18.23.8.8.4. (Added) FOD Prevention Poster Award is designed to share an individual's thoughts and expressions of ways to prevent FOD or show FOD hazards. Posters may be drawn or computer generated on an 8 1/2" X 11" plain white sheet of paper. Posters must not contain copyrighted or trademarked material.

18.23.8.8.4.1. (Added) FOD Prevention Poster of the Quarter winner will receive: a 1-day pass, a certificate of achievement.

18.23.8.8.5. (Added) Quarterly FOD Unit award is presented to the unit demonstrating the most FOD prevention initiative. This involves unit monitors assisting the wing manager, FOD prevention meeting attendance, suggestions, poster and individual submissions, and spot inspection results of FOD prevention walks, vehicle, CTKs and housekeeping inspections. The winning unit will receive the unit rotating plaque, which is determined by a point's scale based on factors mentioned above.

18.23.8.8.6. (Added) The "Golden Bolt" is a painted bolt with an attached piece of metal identifying the person to contact when found. It will be deployed and monitored in high traffic areas during FOD walks, at entry control points, and maintenance hangars. When an individual finds the bolt, they will contact the Wing FOD Manager or Quality Assurance representative and will receive an award for finding it. The Golden Bolt is a monthly FOD awareness program.

18.23.8.11. (Added) Monitor USAFE Forms 145, **Lost Tool/Object Report**.

18.23.8.12. (Added) Monitor USAFE Forms 590, **Dropped Object**.

18.23.9.1. MOC will notify the applicable Flight Safety Office, the wing FOD manager squadron FOD/DOP monitors, propulsion flight chief (as appropriate), and the MXG and OG/CC. Any person discovering or suspecting FOD to aircraft, to include bird strikes, will:

18.23.9.1.1. (Added) Immediately report the finding to their immediate supervisor or production superintendent.

18.23.9.1.2. (Added) Enter the discrepancy on the AFTO Form 781A with a "RED X".

18.23.9.1.3. (Added) The production superintendent or expeditor will notify the MOC.

18.23.10. The units identified on **Attachment 16 (Added)** will ensure a member or representative attend the FOD Prevention Committee meetings.

18.23.11. A preventable dropped object is defined as any item that was lost due to negligence during inspection or improper installation.

18.23.11.1.2. (Added) Commanders will appoint, in writing, a unit Dropped Object Prevention (DOP) Program monitor and provide a copy of this letter to the wing FOD/DOP Monitor. DOP monitor responsibilities may be aligned under the unit FOD monitor if desired. Commanders and supervisors must ensure all personnel are aware of the DOP Program.

18.23.11.2. Unit DOP monitor along with the wing FOD/DOP monitor will identify and develop a training program that ensures all maintenance personnel and aircrew members are adequately familiarized with the DOP Program. Training:

18.23.11.2.1. (Added) Training at a minimum will include, but is not limited to, inspection, installation, removal and repair procedures for aircraft panels, doors, access covers, cowlings, etc. Include awareness and proper care of panel latches, fasteners, nut plates, and other locking devices. Security of hardware, particularly those causing a high incident of dropped objects, will be high interest items on flight crew walk-around.

18.23.11.2.2. (Added) Annotate DOP training in training records and in CAMS. DOP training should coincide with DCC training, ground safety training, flight line safety training, etc.

18.23.11.3.1.1. Secondary Structure (Panel Inspection) Documentation. Units will:

18.23.11.3.1.1.1. (Added) Ensure only qualified individuals, SSgt, 5-skill level or above, perform this inspection.

18.23.11.3.1.1.2. (Added) Enter the following red dash discrepancy in the aircraft AFTO Form 781A, "ALL AIRCRAFT DOORS, PANELS, AND SECONDARY STRUCTURES REQUIRE SECURITY INSPECTION PRIOR TO NEXT FLIGHT".

18.23.11.3.1.1.3. (Added) Ensure inspection is signed off prior to flight.

18.23.11.4. (Added) Local Procedures for investigating dropped objects:

18.23.11.4.1. (Added) An individual discovering a dropped object mishap will:

18.23.11.4.1.1. (Added) Immediately enter a "Red X" in the aircraft AFTO Form 781A. The entry will include a brief description of the missing item.

18.23.11.4.1.2. (Added) Notify applicable AMU Flightline Expediter or AMU Production Supervisor. **NOTE:** If off station, aircrew/maintenance personnel will notify MOC via the nearest command and control facility, telephone/FAX message, or as a last resort, via HF radiophone patch. Upon return to home station, maintenance debrief will ensure that the appropriate entries were made in the AF Form 781A.

18.23.11.4.2. (Added) Production Supervisor will:

18.23.11.4.2.1. (Added) Notify MOC.

18.23.11.4.2.2. (Added) Notify the unit DOP Program Monitor.

18.23.11.4.2.3. (Added) Initiate a USAFE Form 590, **Dropped Object Investigation Checklist**.

18.23.11.4.3. (Added) MOC will:

18.23.11.4.3.1. (Added) Notify Airfield Management to inspect runway for foreign objects.

18.23.11.4.3.2. (Added) Notify QA and 86 AW FOD/DOP Program Monitor.

18.23.11.4.3.3. (Added) Notify Command Post.

18.23.11.4.4. (Added) Unit DOP Program Monitor/individual discovering the dropped object will:

18.23.11.4.4.1. (Added) Assist QA/QAR and wing FOD/DOPP monitor in gathering information relative to the mishap and provide the technical data required for completion of the USAFE Form 590.

18.23.11.4.5. (Added) QA will:

18.23.11.4.5.1. (Added) Promptly and thoroughly investigate all dropped object mishaps. This includes interviewing aircrew and maintenance personnel, as well as, performing detailed review of the aircraft maintenance forms. Specific attention must be given to any maintenance previously performed or associated with the dropped object.

18.23.11.4.5.2. (Added) Complete Items 3 thru 6 of USAFE Form 590, **Dropped Objects Investigation Checklist**.

18.23.11.4.5.3. (Added) Notify 86 MXG/CC of all dropped object incidents involving 86 AW assigned aircraft and advise if impoundment is appropriate.

18.23.11.4.6. (Added) Wing FOD/DOP Program Monitor will:

18.23.11.4.6.1. (Added) Assign a control number from the DOPP logbook located in QA (i.e., 86AW-00-001).

18.23.11.4.6.2. (Added) Prepare and provide a quarterly summary of trend and action to MXG and OG/CC.

18.23.11.4.6.3. (Added) Notify the 86 AW Flight Safety Office whenever a dropped object incident occurs.

18.23.11.4.7. (Added) Coordination of the USAFE Form 590 will include, as a minimum, the person discovering the dropped object, the AMU OIC/NCOIC, the squadron Maintenance Operations Officer/Superintendent, production supervisor, unit DOP Program Monitor, and QA. The Maintenance Operations Officer/Superintendent will ensure a completed USAFE Form 590 is forwarded to QA NLT 48 duty hours after initial discovery of the dropped object.

18.23.11.4.8. (Added) Any time a material or design deficiency is the cause, or suspected cause, a Deficiency Report (TO 00-35D-54) will be initiated, regardless of the availability of an exhibit. Distribute investigation results to each appropriate work center for inclusion in training and awareness programs.

18.26.9.1. 90 day engine run proficiency requirements/documentation:

18.26.9.1.1. (Added) MOC will enter name, employee numbers, date, and aircraft serial number into a log when an engine run is requested. MOC will verify individual qualification using MIS (CAMS screen 593). Ensure individual requesting the run is qualified and does not reflect "overdue" for training. If no "overdue" is noted and the individual is qualified, then run clearance will be granted. Upon completion of the engine run, MOC will update employee numbers in MIS (CAMS screen 268) under applicable course code for 90 day proficiency. MOC will forward the engine run log monthly to MTF. In the event MIS is down, MOC will request the Production Supervisor verify currency on SCR. Updates will be made as soon as MIS becomes available.

18.29. Forms Prescribed.

(Added) AF Form 673, **Request to Issue Publication**

(Added) AF Form 1382, **Request for Review of Publication and/or Form**

(Added) AFMC Form 202, **Nonconforming Technical Assistance Request and Reply**

(Added) DD Form 1574, **Serviceable Tag-Material**

(Added) DD Form 1575, **Suspended Tag-Material**

(Added) DD Form 2026, **Oil Analysis Request**

(Added) DD form 2027, **Oil Analysis Record**

(Added) DD Form 2332, **Product Quality Deficiency Report Exhibit**

(Added) USAFE Form 140, **CTK Inventory and Control Log**

(Added) USAFE Form 145, **Lost Tool/Object Report**

(Added) USAFE Form 281, **Supervisor's Report of Mishap**

(Added) USAFE Form 462, **Abort/Incident Investigation Report**

(Added) USAFE Form 590, **Dropped Objects Investigation Checklist**

(Added) USAFE Form 660, **Quality Assurance Impoundment Record**

(Added) USAFE Form 869, **Local Manufacture Request**

(Added) USAFE Form 0-261, **Aircraft Fuel System Preparation Guide**

18.31. Oil Analysis Program Responsibilities and Requirements (OAP): **NOTE:** Applies to all units utilizing the 86th Airlift Wing OAP Laboratory.

18.31.3.2.1. (Added) The designated representative will be a qualified non-commissioned officer (NCO) from the Nondestructive Inspection Laboratory (NDI).

18.31.5.5. (Added) Act as a central point of contact for the wing Oil Analysis Program.

18.31.5.6. (Added) Coordinate with 86 MXG Quality Assurance to schedule quarterly OAP meetings.

18.31.5.7. (Added) Record and prepare the minutes and reports for the quarterly OAP meetings.

18.31.5.7.1. (Added) Forward quarterly OAP minutes and report to HQ USAFE Logistics Maintenance (HQ USAFE/LGM), 86th Operations Group Commander (86 OG/CC), 86th Maintenance Group Commander and Deputy Commander (86 MXG/CC/CD), 86 Aircraft Maintenance Squadron Commander (86 AMXS/CC), 86 Aircraft Maintenance Squadron Maintenance Operations Officer/Superintendent (86 AMXS/MXA), 76th Aircraft Maintenance Unit OIC (86 AMXS/MXAB), 86th Maintenance Squadron Commander (86 MXS/CC), 86th Maintenance Supervision (86 MXS/MXM), 86th Maintenance Squadron Nondestructive Inspection Section (86 MXS/MXMFN), 86th Maintenance Squadron Transient Alert (86 MXS/MXMT), and all other organizations participating in the OAP.

18.31.6.15. (Added) The 76th Aircraft Maintenance Unit (AMU) OIC (86 AMXS/MXAB) will:

18.31.6.15.1. (Added) Track and forward all quarterly "aircraft not sampled as required" results to the OAP Laboratory one week prior to the quarterly OAP meetings.

18.31.6.15.2. (Added) Ensure personnel immediately correct all DD Form 2026, **Oil Analysis Request**, discrepancies on aircraft in Code “D” status.

18.31.6.15.3. (Added) Ensure the OAP Laboratory is notified of engine changes and provided an oil sample after maintenance runs.

18.31.6.16. (Added) The 86th Maintenance Squadron (MXS) Maintenance Operations Officer or Superintendent will ensure the OAP spectrometer has priority for repair at the Test, Measurements, Diagnostic and Equipment (TMDE) flight.

18.31.6.17. (Added) The 86 MXS QAR (86 MXS/CCX) will ensure all transient alert personnel are trained on proper OAP procedures for transient aircraft.

18.31.7.8. (Added) Only the home base Propulsion Flight Chief or aircraft commander (transient aircraft only) will be able to override the OAP Laboratory recommendation. If recommendations are overridden, the aircraft forms will reflect in detail any “conditional release” approved.

18.31.9.10. (Added) As a minimum, the 86 MXS NDI Section Chief will appoint a highly qualified 5-level to manage the OAP Laboratory.

18.31.9.11. (Added) The OAP Laboratory manager will Ensure a report of all DD Form 2026 errors are given to each customer and to Quality Assurance at the Monthly meetings.

18.31.12.5.1. (Added) Transient Alert will fill out a DD Form 2026 with as much aircraft and engine information as possible.

18.31.12.5.2. (Added) The OAP Laboratory will analyze the oil sample and phone or fax the results to the home station OAP Laboratory.

18.31.12.5.3. (Added) The home station OAP Laboratory will make OAP recommendation to the 86 MXS OAP Laboratory.

18.31.12.5.4. (Added) The OAP Laboratory will pass the recommendation on to the 86 MXG/MOC to be relayed through to Transient Alert.

18.31.12.5.5. (Added) The name of the person making the OAP recommendation from home station will be annotated in the remarks section of the OAP Laboratory’s automated sign-in log.

18.31.12.5.6. (Added) Incomplete DD Forms 2026 resulting from a transient aircraft diverting in without aircraft forms will not be counted as errors on monthly or quarterly statistics.

18.31.12.5.7. (Added) If home station OAP laboratory cannot be reached, laboratory recommendation code “X” will be used and sample results will be given to the customer.

18.31.13. (Added) Training Requirements:

18.31.13.1. (Added) Each unit or activity will ensure all personnel in the OAP are trained on all procedures within the program. All OAP monitors will visit the OAP Laboratory within 30 days of being assigned to become familiar with OAP procedures and responsibilities.

18.31.13.2. (Added) Flight line supervisors will indoctrinate all personnel on proper sampling procedures according to T.O. 33-1-37, *Joint Oil Analysis Program Manual*, before authorizing them to take samples. This will be annotated in training records.

18.31.13.3. (Added) OAP Laboratory personnel will complete an approved oil analysis operator/evaluator course and have at least six months hands-on experience in an OAP Laboratory before making maintenance recommendations.

18.31.14. (Added) Records Checks and Oil Added since Last Sample:

18.31.14.1. (Added) Records checks will be conducted by the 76 AMU 30 days.

18.31.14.2. (Added) The records checks will confirm the following with the OAP Laboratory: the aircraft and engine serial numbers, the engine operating hours, oil serviced since last OAP sample, and the time since oil change (this requirement may be met with a phone call).

18.31.14.3. (Added) The OAP Laboratory will document the record checks on the aircraft's OAP records in the remarks section.

18.31.14.4. (Added) The oil added since last sample will be tracked for all engines and auxiliary power units for C-9 aircraft on the aircraft's AFTO Form 781J, **Aerospace Vehicle-Engine Flight Document**, and annotated on the DD Forms 2026.

18.31.15. (Added) Routine OAP Procedures:

18.31.15.1. (Added) An oil sample will be taken and a "red dash" entered into the aircraft's AFTO Form 781A, **Maintenance Discrepancy and Work Document** (or equivalent) for "engine and auxiliary power unit (APU) OAP samples due." One write-up may be used when all three samples (both engines and the APU) are due.

18.31.15.2. (Added) A DD Form 2026 will be filled out according to T.O. 33-1-37.

18.31.15.3. (Added) Draw sample within 30 minutes of engine shut-down.

18.31.15.4. (Added) The samples will be submitted to the OAP Laboratory within 75 minutes of engine shut-down..

18.31.15.5. (Added) The OAP Laboratory will analyze the sample and call within 75 minutes of receiving the sample. MOC will notify Transient Alert or owning organization of the OAP results.

18.31.15.6. (Added) Samples taken and delivered after normal duty hours will be placed in the OAP Laboratory drop slot (sample response time does not accrue during this time). The OAP Laboratory will enter the information into the sample log at the beginning of the next duty shift.

18.31.15.7. (Added) Upon receiving the results from MOC, the owning unit will sign off the aircraft AFTO Forms 781A.

18.31.16. (Added) Procedures for samples placed on code "D":

18.31.16.1. (Added) Any aircraft with DD Form 2026 discrepancies essential to oil analysis trending will be immediately placed on code "D".

18.31.16.2. (Added) Aircraft engines on code "D" will immediately be removed from service until the discrepancies are corrected. **EXCEPTION:** If aircraft is off station, MOC will coordinate with the 76 AMU to facilitate immediate correction of "D" status. MOC will relay corrected times to NDI.

18.31.17. (Added) "Red Cap" OAP Sample Procedures:

18.31.17.1. (Added) Upon getting unsatisfactory results after analyzing an oil sample, the OAP Laboratory will immediately place the equipment on code "B" or code "P".

18.31.17.2. (Added) The OAP Laboratory will immediately notify MOC. MOC will notify the owning organization of the code and reason.

18.31.17.3. (Added) The owning organization will immediately document the aircraft AFTO Form 781A, contact OAP laboratory, take a “Red Cap” sample, and submit to the OAP Laboratory along with properly documented DD Form 2026.

18.31.17.4. (Added) The sample response time for all “Red Cap” samples shall be one hour.

18.31.17.5. (Added) Upon confirming that an unsatisfactory condition exists, the OAP Laboratory will notify MOC of the appropriate maintenance code.

18.31.17.6. (Added) The MOC will provide OAP maintenance recommendations and the reasoning to 76 AMU and 86 MXG/CD or the home station’s MOC.

18.31.17.7. (Added) The aircraft’s AFTO Forms 781A will be documented with a Red X or Red Dash (depending on OAP Laboratory recommendation), the OAP code, and reason.

18.31.17.8. (Added) After analysis of “Red Cap” sample, OAP laboratory will notify MOC of sample results and further recommendations.

18.31.17.9. (Added) Only the home station Propulsion Flight Chief or aircraft commander (transient aircraft only) will be able to override the OAP laboratory recommendation. If recommendations are overridden, the aircraft forms will reflect in detail any approve “conditional release”.

18.31.18. (Added) Procedures for OAP Equipment Breakdowns:

18.31.18.1. (Added) The OAP Laboratory will notify the MOC, 86 MXS Supervision, and TMDE if OAP capability is lost.

18.31.18.2. (Added) 86 MXS Supervision will notify 86 MXG/CD and 86 MXS/MXMTT.

18.31.18.3. (Added) If the OAP unit is beyond the repair capability of TMDE, AF Joint Oil Analysis Program Office and the OAP unit manufacturer will be contacted.

18.31.18.4. (Added) In the event OAP capability is down for an extended period of time, the 86 MXS Maintenance Supervisor will coordinate the forwarding of the sample(s) to Spangdahlem Air Base for analyzing.

18.31.18.5. (Added) The results will be phoned or faxed back to the 86 MXS OAP Laboratory by Spangdahlem’s OAP Laboratory for analysis.

18.31.18.6. (Added) The 86 MXS OAP Laboratory will notify MOC of the results.

18.31.18.7. (Added) Transient Alert samples may be taken and given to the aircrew to be analyzed at the next base with OAP capability in accordance with AFI21-101_USAFESUP1.

18.31.19. (Added) Oil Servicing Carts:

18.31.19.1. (Added) All oil servicing carts used on OAP affected oil systems will be sampled and delivered to the OAP Laboratory every seven days (user responsibility) or whenever a drain and flush is accomplished (owning combat Aerospace Ground Equipment team responsibility).

18.31.19.2. (Added) AGE Flight will establish procedures to track and document samples and results. Procedures will be approved by the 86 MXS Supervision.

18.31.19.3. (Added) The OAP Laboratory will call results directly into MOC. MOC will notify owning organization.

18.31.19.4. (Added) Oil carts with wear metal readings exceeding the acceptable limits in accordance with **Table 18.3. (Added)** will be removed from service and placed on code “B” or “P” and a “Red Cap” sample will be submitted immediately.

18.31.19.5. (Added) If the resample from the oil cart reads above the established limits, the oil cart will be placed on code “J” for a complete drain and flush by 86 MXS Aerospace Ground Equipment Flight.

Table 18.3. (Added) Maximum Oil Cart Wear Metals Limits.

FE	AG	AL	CR	CU	MG	NI	PB	SI	SN	TI	MO	ZN
2	2	2	2	2	2	2	3	7	N/A	2	2	4

18.32. Crashed, Damaged, or Disabled Aircraft Repair (CDDAR) Procedures. *NOTE:* Applicable to all Ramstein Air Base units. 86 AW Plan 91-204, *Mishap Response Plan*, and 86 AW Plan 32-1, *Base Disaster Preparedness Operation Plan*, cover general CDDAR procedures. This supplement outlines additional requirements.

18.32.7. (Added) Ramstein CDDAR Procedures.

18.32.7.1. (Added) General.

18.32.7.1.1. (Added) The prompt removal of disabled aircraft from the active runway and proximity is of vital importance. Ramstein Air Base will return to operational status as soon as practical after a mishap. However, the 86 AW commander or designated representative, as stated in AFM 32-4004, will determine the degree of emergency and make the ultimate decision regarding the priority with which the runway will be cleared.

18.32.7.1.2. (Added) The on-scene commander will contact appropriate Air Force commands, depots and/or agencies for CDDAR operations involving their aircraft. In mishaps involving allied NATO aircraft and all non-Air Force aircraft where removal would further damage the airframe, the proper authorities will be contacted. In an emergency, contacting proper authorities will not preclude removal of the aircraft from the runway.

18.32.7.1.3. (Added) In mishaps involving AMC aircraft or AMC-chartered aircraft, the 723 AMS senior maintenance representative will coordinate assistance through the Air Mobility Squadron's Aircraft Maintenance Coordination Center. The 723 AMS will respond to all large-body aircraft emergencies with required tow equipment, and trained tow personnel, for emergency removal of AMC assigned/ Transient aircraft from the runway. Technical expertise, as required, will be provided via the 723 AMS senior maintenance representative to expedite recovery operations. The Crash Recovery/Transient Maintenance section will coordinate with the on-scene commander, in conjunction with the AMC on-scene maintenance representative, to determine assistance requirements.

18.32.7.1.4. (Added) Support for CDDAR operations at Geographically Separated Units (GSUs) that exceed base personnel qualifications or capabilities will be coordinated through the MOC. The MOC will contact the 86 MXS Production Superintendent to coordinate all equipment, transportation, and personnel required for CDDAR operations at the specified location.

18.32.7.1.5. (Added) CDDAR exercises will be performed annually IAW.

AFI 21-101_USAFESUP1, paragraph 18.32.6. Exercises will involve all wing agencies associated with the crash recovery process. Every effort will be made to make the training as realistic as possible demonstrating the correct use of crash recovery equipment and will involve specific training on assigned aircraft.

18.32.7.1.6. (Added) Unauthorized personnel are not permitted at the accident/emergency scene. Authorization to enter the accident scene will only be granted by the on-scene commander.

18.32.7.1.7. (Added) When recovering a crashed or disabled aircraft with composite materials, personnel protective equipment will be used when the potential exists for exposure to hazardous fumes or materials. As a minimum, an approved respirator, rubber gloves, and adequate protective clothing will be used IAW specific aircraft technical orders and technical order 1-1-690.

18.32.7.2. (Added) Procedures.

18.32.7.2.1. (Added) Upon declaration of a potential or actual major aircraft accident on the runway or in close proximity, the following sequence of events occurs:

18.32.7.2.1.1. (Added) All accident response agencies are notified according to RABI 11-101, Chapter 5 and OPLAN 32-1.

18.32.7.2.1.2. (Added) The 86 AW commander or designated representative determines and notifies the on-scene commander of removal conditions, which are classified as follows:

18.32.7.2.1.2.1. (Added) Emergency. This condition requires immediate runway clearance at the risk of losing personnel and/or equipment. Although rescue may be attempted, the runway will be cleared in 30 minutes or less.

18.32.7.2.1.2.2. (Added) Urgent. This condition requires runway clearance as soon as possible after completion of rescue, fire fighting, and explosive ordinance disposal (EOD) operations. The runway will be cleared in less than 1 hour and 30 minutes, unless EOD consideration dictates otherwise, using techniques identified in applicable technical publications.

18.32.7.2.1.2.3. (Added) Routine. This condition allows sufficient time to use recovery techniques to minimize further damage to aircraft and precludes exposing personnel or equipment to danger.

18.32.7.2.2. (Added) The on-scene commander will use all assets available to ensure aircraft removal activities are conducted in a manner that ensures the conditions of removal are met. Normally, this will be accomplished by the 86 MXS Crash Recovery Team Chief. However, under certain conditions, such as "emergency" or "urgent," time may not permit the use of normal procedures. When necessary, the on-scene commander will, in conjunction with key members of the disaster control group, decide which removal methods are best, and which disaster response activities (such as EOD, fire fighting, decontamination, and rescue) defined in OPLAN 32-1 may or may not proceed. Under these conditions, any on-base asset may be used for recovery operations.

18.32.7.2.2.1. (Added) The on-scene commander will determine via airfield operations, command post, and 723 AMS whether explosives are on board the aircraft.

18.32.7.2.2.2. (Added) The on-scene commander will ascertain type, hazard class, and division of explosives.

18.32.7.2.2.3. (Added) If no fire exists, the Senior Fire Officer and the owning Production Superintendent will evacuate personnel a minimum of 300 feet from crashed/damaged aircraft with explosives.

18.32.7.2.2.4. (Added) If engulfed in flames, the Senior Fire Officer and the owning Production Superintendent will evacuate personnel as follows (as per AFMAN 91-201):

18.32.7.2.2.4.1. (Added) 1.4: Minimum distance 300 feet.

18.32.7.2.2.4.2. (Added) 1.3: Minimum distance 600 feet.

18.32.7.2.2.4.3. (Added) 1.2 (All) and 1.6: Minimum distance 2,500 feet.

18.32.7.2.2.4.4. (Added) 1.1 and 1.5 Unknown quantity: Minimum distance 4,000 feet.

18.32.7.2.3. (Added) The on-scene commander, with the assistance of the Crash Recovery Team Chief and Senior Fire Officer, will determine whether the aircraft can be safely taxied or towed. If the aircraft cannot be taxied or towed, the Crash Recovery Team will conduct the appropriate recovery operation.

18.32.7.2.4. (Added) In emergency situations where normal recovery methods will take excessive time, the on-scene commander will request 86th Civil Engineering Group (86 CEG) to remove the wreckage with whatever heavy equipment is required.

18.32.7.2.5. (Added) When time permits, explosive/flammable material will be removed as safely as possible from the aircraft before it is moved. Personnel with the appropriate AFSC should perform the removal. 723 AMS munitions qualified personnel to remove flares from AMC aircraft as applicable.

18.32.7.2.6. (Added) Time permitting, recovery operations will proceed under the detailed instructions of RABI 32-4004 and 86 AW OPLAN 91-204 to ensure all functions work as a cohesive group. The 86 CEG, 86 Vehicle Readiness Squadron (86 VRS), and 86 MXS will identify equipment (e.g., bulldozers, snowplows, flatbed trucks, front end loaders, cranes, and forklifts) for use under one or more removal conditions. Squadrons will keep this equipment list current and provide it to the group representative. The CDDAR Team Chief will advise the on-scene commander of the most prudent method of aircraft removal under the declared removal condition.

18.32.7.2.7. (Added) When recovering an aircraft with a suspected hot brake condition, the on-scene commander will direct the applicable production superintendent for the owning agency to confirm the condition IAW applicable technical data. Once a hot brake condition is confirmed, the production superintendent will ensure that there is a 300 ft. cordon around the aircraft. Upon termination of the hot brake condition, the production superintendent will determine final parking and assemble a tow team as needed.

18.32.7.3. (Added) Off-base crash recovery.

18.32.7.3.1. (Added) All units tasked with emergency response will respond IAW 86 AW OPLAN 32-1.

18.32.7.3.2. (Added) Upon notification of an off-base crash, the CDDAR Team Chief or recovery superintendent and the 86 MOS MOC will implement the crash recovery recall roster.

18.32.7.3.3. (Added) The MOC will alert the vehicle operations dispatcher that the following vehicles may be required for dispatch. The dispatcher will reserve the following vehicles and drivers as a minimum for dispatch: one 6-passenger 4-wheel-drive truck, one 1.5-ton truck or equivalent, two 7.5-ton tractors or larger and 40-ft trailers for transporting equipment and wreckage as needed.

18.32.7.3.4. (Added) The Crash Recovery Team Chief will review the situation in conjunction with the on-scene commander to determine equipment requirements.

18.32.7.3.5. (Added) Equipment and personnel will be moved off base only upon approval by 86 AW/CC or designated representative. This is to ensure enough assets are available to handle an on-base mishap.

18.32.7.3.6. (Added) The disaster response force will control the mishap scene until released to the president or interim president of the Safety Investigation Board.

18.32.7.3.7. (Added) Do not remove or disturb equipment unless directed by the Safety Investigation Board president, or on-scene commander, for rescue or security reasons.

18.32.7.3.8. (Added) Once the wreckage is released to the crash recovery section, augmented personnel from base resources will load the wreckage for return to Ramstein Air Base.

18.32.7.4. (Added) Responsibilities.

18.32.7.4.1. (Added) The following positions are designated as crash recovery superintendents and will supervise the overall recovery operation:

18.32.7.4.1.1. (Added) Primary - 86 MXG/CC or 86 MXG/CD.

18.32.7.4.1.2. (Added) First Alternate - 86 MXS/CC.

18.32.7.4.1.3. (Added) Second Alternate - 86 MXS Maintenance Operations Officer.

18.32.7.4.2. (Added) Maintenance Operations Center (MOC) responsibilities:

18.32.7.4.2.1. (Added) Receive crash information on secondary crash net.

18.32.7.4.2.2. (Added) Notify all agencies and key personnel of the incident/emergency.

18.32.7.4.2.3. (Added) Maintain contact with crash recovery team chief at all times and ensure that an appropriate radio net is restricted to crash recovery team member cross talk and emergency traffic only.

18.32.7.4.2.4. (Added) The senior or on-duty controller will coordinate with appropriate agencies for additional personnel and/or equipment at the direction of the crash recovery team chief.

18.32.7.4.3. (Added) The 86 MXS CDDAR team will:

18.32.7.4.3.1. (Added) Conduct CDDAR operations IAW applicable aircraft technical orders and local checklist. Upon arrival, the CDDAR will report to the on-scene commander, and if deemed safe or practical, begin removal of aircraft. If on scene first, establish radio communication with Fire Chief and take action as required.

18.32.7.4.3.2. (Added) Respond to all aircraft barrier engagements with the assistance of 86 MXS Transient Alert IAW RABI 11-101, remove the aircraft from the barrier using applicable techniques and tow the aircraft to an approved parking spot.

18.32.7.4.3.3. (Added) Maintain a minimum of two personnel for initial crash recovery response/operations, one of which will be an E-5 or higher who acts as team chief for CDDAR operations and tow supervisor. The MOC or the 86 MXS Production Superintendent will contact the CDDAR standby team after normal duty hours.

18.32.7.4.3.4. (Added) Coordinate additional aircraft CDDAR requirements/equipment request through MOC if necessary.

18.32.7.4.3.5. (Added) In conjunction with the MTF, develop and implement a training plan to ensure all CDDAR team members are qualified and trained to perform duties on assigned C-130, C-9, C-20, C-21, and C-37 aircraft IAW Aircraft Crash Recovery Course. MA 2A5XX-372 within 180 days of arrival and will be re-certified at least every 15 months. Actual and simulated training will include as a minimum:

18.32.7.4.3.5.1. (Added) Safety precautions.

18.32.7.4.3.5.2. (Added) Towing operations.

18.32.7.4.3.5.3. (Added) Wheel dolly operations.

18.32.7.4.3.5.4. (Added) Barrier disengagement.

18.32.7.4.3.5.5. (Added) Positioning and operation of assigned cranes.

18.32.7.4.3.5.6. (Added) Written tests.

18.32.7.4.3.6. (Added) Ensure all crash recovery equipment is accounted for and comply with serviceability checks for all powered equipment quarterly. Accomplish periodic inspections as required. Ensure emergency response vehicles are operational and tools are serviceable for the CDDAR crew at all times.

18.32.7.4.3.7. (Added) Notify 86 MXS Maintenance Supervision and 86 AW/MOC of any changes that will affect CDDAR equipment response status.

18.32.7.4.4. (Added) Owning Agency or AMU will respond to a ground emergencies or a predetermined position for IFEs. To ensure the safety of personnel, only the applicable production superintendent or designated representative for the owning agency will respond to an in-flight/ground emergency (IFE/GE). The production superintendent or designated representative will notify the on-scene commander or fire chief that the required personnel and tow vehicle are standing by to assist the fire department as needed. CDDAR will personnel will only respond to a crash/accident, not to each in-flight/ground emergency.

18.32.7.4.5. (Added) Fire department will respond to all emergencies associated with aircraft and ensure that the scene is fire safe. Aircraft will be released back to maintenance to conduct appropriate CDDAR as soon as practical.

18.32.7.4.6. (Added) 86MXS/TA will respond to all F-16 aircraft with possible emergency power unit activations and perform procedures IAW 86 AW OPLAN 32-4002 and applicable technical orders for hydrazine leaks.

18.32.7.5. (Added) Equipment.

18.32.7.5.1. (Added) The following equipment is essential for clearing active runways and taxiways:

18.32.7.5.1.2. (Added) A quick response truck with four-wheel drive capability. Additionally, the truck should be equipped with a pintle hook.

18.32.7.5.1.3. (Added) Nine pneumatic bags with two A-1 blowers.

18.32.7.5.1.4. (Added) Three blown tire dollies.

18.32.7.5.1.5. (Added) Coleman tractor (MB4/MB2).

18.32.7.5.1.6. (Added) Tow bars for assigned aircraft and some NATO aircraft.

18.32.7.5.2. (Added) **NOTE:**The above listed equipment, due to design limitations, allows recovery of fighter-like airframes and C-130 aircraft. Crash Recovery/Transient Maintenance does not maintain all equipment and technical orders necessary for recovering all large body airframes. Tow equipment, technical orders, and maintenance expertise required to recover large body aircraft such as C-5, C-17, C-141, and C-135 can be obtained from the 723 Air Mobility Squadron's (AMS) Aircraft Maintenance Coordination Center, at 480-6416. Obtain C-9 support from the 76 AMU, Ramstein Air Base, at 480-7044, and C-130 support from the 37 AMU, Ramstein Air Base, through the Maintenance Operations Center (MOC). The 86 MOS MOC supports C-20 and C-21.

18.32.7.5.3. (Added) Crash recovery equipment should be stored and transported in air-transportable containers to assure highest mobility for off-base operations deemed necessary by USAFE for theater response.

18.32.7.5.4. (Added) When Aero Repair's 50-ton crane is inoperative, they will notify the MOC. In such cases, any wing assigned crane will be utilized as a back up for crash recovery. A CDDAR representative will check the status of other wing assigned cranes daily when the 50-ton crane is inoperative. 86 VRS will updated the MOC and 86 MXS on the status of the crane.

18.32.7.5.5. (Added) The 86 VRS and 86 CEG will furnish and operate secondary equipment a required (for example, an additional 7.5-ton or larger tractor, a 40-ft trailer, and a 10-25K forklift or front end loader with driver, or any other equipment as determined necessary by the on-scene commander).

18.36. (Added) Incidents/Aborts/Unusual Occurrences Procedures. Whenever an aircrew debriefs an abort/incident, or when specified by the production supervisor, the following procedures will be initiated.

18.36.1. (Added) Applicable AMU Debrief Section will:

18.36.1.1. (Added) Document and track all aborts/incidents. The discrepancy block for the event will be documented as a "Red X" in the AFTO Form 781A and contain the statement "ABORT/INCIDENT GENERATED" (as applicable) followed by the discrepancy narrative. This will identify these jobs as created due to aircraft incidents/aborts/unusual occurrences.

18.36.1.2. (Added) Load a JST in MIS for the following work centers, ensuring WCE narrative directs a review of the corrective action of the original discrepancy. **NOTE:** Bird strikes only require a JST if damage occurs or a special inspection is required.

18.36.1.2.1. (Added) Primary work center supervision.

18.36.1.2.2. (Added) AMU OIC/NCOIC or Flight Commander/Chief.

18.36.1.2.3. (Added) Maintenance Operations Officer/Superintendent.

18.36.1.2.4. (Added) QA.

18.36.1.3. (Added) Track routing of USAFE Form 462, Abort/Incident Investigation Report, ensuring all applicable blocks in parts I and II are completed prior to forwarding to QA. Form will be forwarded no later than 3 duty days after corrective action is completed.

18.36.2.1. (Added) Work centers cited in JST and USAFE Form 462 will:

18.36.2. (Added) Review and document applicable AFTO Form 781A entry corrective action and MIS for adequacy and thoroughness. Supervisory review of removal and replacement actions should determine if submittal of deficiency report is appropriate.

18.36.2. (Added) Forward USAFE Form 462 to proceeding work center cited in Part I of form no later than one duty day after receipt of form or job completion, as applicable.

18.36.3. (Added) QA, in addition to items listed above, will:

18.36.3.1. (Added) Investigate abort/incidents. An aircraft incident/abort worksheet will be initiated and filed in the program binder when notified by MOC.

18.36.3.2. (Added) Applicable QA inspector will review USAFE Form 462 for accuracy and completeness, forward form to Superintendent or Chief Inspector, and ensure the QA incident/abort worksheet has

been completed. Forward completed to Analysis Section for processing no later than 3 duty days after receipt.

18.37. (Added) Adverse Weather Procedures. Production Supervisors and Expeditors will monitor flight-line adverse weather conditions. They will report those conditions to the MOC representative as they deteriorate or change.

18.37.1. (Added) The MOC will notify the following agencies immediately upon notification of fog, lightning, snow conditions, or forecast winds of 25 knots or more (sustained and/or gusts):

18.37.1.1. (Added) Production Supervisors. Production Supervisors will notify AMU OIC/NCOIC or Maintenance Operations Officer/Superintendent as deemed necessary.

18.37.1.2. (Added) AGE Drivers.

18.37.1.3. (Added) Transient Alert.

18.37.1.4. (Added) Fuel Systems Repair Element (for lightning and winds).

18.37.1.5. (Added) Fuels Management Flight.

18.37.2. (Added) Transient Alert will: Ensure transient equipment is removed and secured; review applicable aircraft TO for special requirements; inform MOC of requirements and actions taken.

18.38. (Added) Aircraft Towing and Hangaring.

18.38.1. (Added) Tow Supervisor Requirements. All supervisors will be as a minimum: E-4 ,5-skill level, identified on the SCR, and current on all tow training.

18.38.2. (Added) Tow Supervisor Minimum Responsibilities:

18.38.2.1. (Added) All tows:

18.38.2.1.1. (Added) Verify tow qualifications of the team members.

18.38.2.1.2. (Added) Verify all tow team members have a whistle to alert the tow driver to make an emergency stop.

18.38.2.1.3. (Added) Verify aircraft clearance. Anytime the clearance on any part of the aircraft is less than 10 feet, tow team supervisor will cease tow operation and personally check clearance prior to proceeding.

18.38.2.1.4. (Added) Obtain approval for a "no brakes" chock dragging tow from Production Supervisor.

18.38.2.1.5. (Added) Remove all AGE and equipment from aircraft vicinity and ensure towpath is clear of obstructions.

18.38.2.2. (Added) Tows Into/Out of Hangars. When towing into or out of any hangar, the tow supervisor will ensure all items on Aircraft Hangaring Checklist, **Attachment 13 (Added)**, are accomplished. Completed checklist will be posted by external power receptacle.

18.38.2.2.1. (Added) Tows into hangars will not deviate from painted tow lines unless required for special need (e.g. aircraft weigh).

18.38.2.2.2. (Added) Explosives loaded aircraft, including those loaded with ALE-40 munitions, will only be hangared under the provisions outlined in T.O. 11A-1-33.

18.38.2.2.3. (Added) Ensure all AGE and/or equipment is stored in approved designated locations.

18.38.2.2.4. (Added) Prior to aircraft entry into/removal from hangar, tow supervisor will perform a hangar safety walk through to ensure all obstructions are outside of wing tip clearance lines.

18.38.2.2.5. (Added) In hours of darkness, ensure interior and exterior lighting is on and working. If any exterior lights are out, the tow may continue at discretion of aircraft tow supervisor.

18.38.2.2.6. (Added) Ensure all hangar doors are fully open. Qualified members will operate hangar doors IAW posted procedures.

18.38.2.2.7. (Added) Use extreme caution, when towing a C-9 aircraft into and out of the hangar using a MB4 tow vehicle. It is recommended to use a MB2 tow vehicle, whenever possible, under slippery conditions.

18.38.2.2.8. (Added) Transient Alert will coordinate transient aircraft movements through applicable squadron Production Supervisor and 86 MOS MOC.

18.38.3. (Added) Emergency Tow/Extraction Procedures:

18.38.3.1. (Added) MOC will:

18.38.3.1.1. (Added) Notify Fire Department of the emergency, if not previously involved.

18.38.3.1.2. (Added) Broadcast over the appropriate maintenance radio net: "Emergency extraction of (type aircraft) is required from hangar # ____." Fire Department may also direct the appropriate Production Supervisor to take charge of the emergency extraction.

18.38.3.2. (Added) Applicable squadron will:

18.38.3.2.1. (Added) Respond with a tow tractor, tow bar, tow team and a tow supervisor as directed by the Production Supervisor.

18.38.3.2.2. (Added) Supervise the action required. In all cases, all tow preparation actions will be taken. The aircraft will not be moved, except under dire emergency conditions where loss of or damage to the aircraft may occur. Take all precautions necessary to ensure compliance with established safety procedures whenever a requirement to move an aircraft exists.

18.39. (Added) Fuel Systems Maintenance Procedures. **NOTE:** Applicable to all Ramstein Air Base units. MOC will be the primary point of contact for all aircraft/units requiring 86 AW Fuel Systems support. Augmentee or TDY personnel must read this publication prior to performing maintenance on aircraft fuel systems at this station. MOC will coordinate all fuel systems maintenance with 86 MXS Production Supervisor.

18.39.1. (Added) Safety. Anyone requiring access to a fuel systems repair area will check with the fuel systems supervisor and will enter only through the entry control point.

18.39.1.1. (Added) When winds are 30 knots or higher, open fuel system maintenance will be suspended.

18.39.1.2. (Added) Personnel will not access aircraft upper surfaces when winds are 30 knots or higher unless proper fall restraint systems are utilized.

18.39.1.3. (Added) Fuel Systems Repair Section Chief will ensure all personnel required to perform tank entry receive Fuel Cell Safety training. This training is documented in CAMS, course codes 4571/4572. Ensure all personnel are trained on the proper fit and wear of respirators. This training is also documented in CAMS, course code 4393. Conduct an annual emergency evacuation exercise. This exercise must

include the extraction of a worker from a simulated aircraft fuel tank. Document training in CAMS, course code 4572.

18.39.1.4. (Added) No other maintenance will be performed concurrently with fuel system repair operations, except as authorized by TO 1-1-3. In addition, the approval of either the fuel system section chief, shift supervisor, or on-site team chief is mandatory.

18.39.2. (Added) Designated Fuel Systems Repair Areas. These areas shall be used for tank entry maintenance or when deemed necessary by the fuel system specialist/technician, for safety reasons.

18.39.2.1. (Added) Primary Facility (Hangar 3, Bldg 2310). When aircraft are fully enclosed in the hangar, fuel system maintenance need not be suspended during high wind conditions. All fuel system repair operations will be suspended when thunderstorms/lightning are within 5 nautical miles. Maintenance Operation Center (MOC) in coordination with the Base Weather Office is responsible for notifying the fuels section when severe weather is within 10 nautical miles to ensure fuels system personnel can take appropriate action prior to the severe weather reaching 5 nautical miles.

18.39.2.2. (Added) Alternate repair sites. Aircraft parking spots 9-3, and 9-6 for C-130 and C-9 aircraft. Temporary repair sites 5A-14 or 22 for C-5, C-17 and C-141 aircraft. The alternate hot cargo pad between taxiways G and H for C-130, C-9, C-17 and C-141 aircraft. These sites are designated as open fuel system repair areas in accordance with (IAW) TO 1-1-3. The following restrictions apply:

18.39.2.2.1. (Added) Alternate repair areas will be used when Hangar 3 is occupied for maintenance and when weather conditions are conducive to fuel systems maintenance. Coordination between the 86 AW/CP and 723 AMCC is required prior to using the alternate hot cargo pad for open fuel system maintenance.

18.39.2.2.2. (Added) When alternate repair areas are used, personnel will ensure adjacent aircraft are not allowed to operate under their own power within 100 feet of the repair area. During cold weather, when ambient temperature is below 60 degrees Fahrenheit, no in-tank sealant repairs will be performed. No explosion suppression foam material will be removed from the C-130 aircraft, except for removing and replacing main tank boost pumps.

18.39.2.2.3. (Added) The on-site fuel system supervisor will determine the safety of an aircraft parking spot to be used for removing and replacing fuel system components that do not require tank entry.

18.39.2.2.4. (Added) The MXG/CC/CD designates other alternate repair areas only when established and approved fuel systems maintenance areas are unavailable. Alternate repair areas will be coordinated with the Fuel System Section Chief, Base Fire Department, Bioenvironmental, Wing Safety, and Airfield Management.

18.39.3. (Added) Preparation of Aircraft for Fuel System Repairs. This operation is time consuming and labor intensive. Therefore, the cooperation of all parties involved is essential to ensure manpower resources are used in the most efficient manner.

18.39.3.1. (Added) 86th MXS Fuel Systems Repair Section will: Prepare two copies of the C-130 Fuel Systems Preparation for Maintenance sheet and coordinate with the appropriate expeditors. The expeditor will receive one copy and the fuels section will retain a copy. Fuel system preparations for C-9, C-5, C-17 and C-141 will be annotated in the AFTO Forms 781A. Ensure all items of the fuel system aircraft hangar checklist and tank entry checklist are accomplished prior to beginning fuel system maintenance. Be responsible for the security of the area while fuel system repair is in progress. Ensure all personnel entering aircraft fuel tanks are confined space qualified. Ensure all persons entering the fuel system repair area

receive a safety briefing. Ensure proper housekeeping. Open Hangar 3 doors prior to an aircraft entering or leaving the hangar.

18.39.3.2. (Added) 86 AMXS and 723 AMSS maintenance will: Ensure the aircraft has been configured for fuel system maintenance IAW preparation sheet or AFTO Form 781A by Fuel System Section personnel. When applicable, perform all items on fuel system aircraft hangar checklist and sign off its completion. Perform draining of specified fuel tanks as IAW preparation sheet or AFTO Form 781A prior to towing aircraft into the fuel system repair area. Tow the aircraft to the designated fuel system repair area. Ensure drip pans are cleaned and stowed prior to removing aircraft from hangar. Provide a trained equipment monitor/runner when requested by the fuel system repair section.

18.39.3.3. (Added) 86 MXS Metals Technology, Aircraft Structural Maintenance and Nondestructive Inspection (NDI) Laboratory section Chief Responsibilities. Fuel system maintenance requires specific safety measures be taken to reduce the hazards of a mishap and increase the level of personnel safety. The section(s) will: Ensure a core number of personnel are trained and certified on an annual basis to meet tank entry requirements. This is to avoid last minute maintenance delays due to lack of training or medical certification. Personnel required to perform tank entry will be trained/certified on the following items: Receive a physical examination, as required by occupational health personnel, in accordance with TO 1-1-3 paragraph 2.5.1; Core Automated Maintenance System (CAMS) course code 4381. Respirator Fit Testing and Training; CAMS course code 4393. Hazardous Communication; Self Aid Buddy Care and CPR; CAMS course codes 11/164/4382. Confined Space Entry and Fuel System Familiarization; CAMS course code 4571/4572. All training will be documented in CAMS using established course codes or by using other approved methods for documenting training.

18.39.4. (Added) Procedures:

18.39.4.1. (Added) Fuel Systems Supervisor will:

18.39.4.1.1. (Added) Coordinate with 86 MXS Production Supervisor and owning/supporting squadron Production Supervisor when a fuel systems discrepancy requires evaluation.

18.39.4.2. (Added) Owning/supporting Squadron Production Supervisor will ensure aircraft has proper fuel configuration per USAFE Form 0-261, **Aircraft Fuel System Preparation Guide**, prior to the aircraft being towed to a fuel systems repair area. Exceptions will be coordinated through 86 MXS Production Supervisor and Fuel Systems Element.

18.39.4.3. (Added) MOC will notify control tower and any other sections, as appropriate, to restrict radio transmissions within 50 feet, radar transmissions within 300 feet, and aircraft operating under their own power within 100 feet of a fuel systems repair area.

18.39.5. (Added) Transient Aircraft Fuel Systems Maintenance. All transient aircraft requiring fuel systems maintenance will be refueled/serviced by the owning/supporting squadron and troubleshooted by 86 MXS Fuel Systems Repair Section personnel. This is dependent upon the troubleshooting procedures at forward location, discrepancy description, and whether the technician who did the troubleshooting accompanied the aircraft. The following troubleshooting procedures will be followed:

EXCEPTIONS: When a complete fuel systems repair team (minimum of two each qualified fuel systems personnel) arrives with the aircraft and will perform the maintenance themselves. 86 MXS Fuel Systems Repair Section will provide equipment, facilities, and personnel to the repair team as needed or available.

18.39.5.1. (Added) If no evidence of leakage shows up after the leak check period prescribed by technical data, fuel systems personnel may request the aircraft be towed to help reproduce previously identified leak.

18.39.5.2. (Added) If no evidence of leakage shows up after the tow, 86 MXS Production Supervisor may request the aircraft be flown on a local sortie so a leak check can be performed after flight.

18.39.5.3. (Added) If no evidence of leakage is visible after the above procedures (24-hour leak check, tow and local flight), a 7-level Fuel Systems Craftsman will clear the discrepancy.

18.40. (Added) Isochronal (ISO) Inspection Coordination. **NOTE:** Any deviations from these procedures must be coordinated between 86 AMXS and 86 MXS at least one duty day prior to the deviation.

18.40.1. (Added) Aircraft Condition. When turned over to ISO, the aircraft will be as close to full mission capable (FMC) condition as possible. Do not cannibalize parts that would prevent compliance with inspection requirements unless directed by the 86 MXG/CC. ISO will not be responsible for correcting discrepancies/TCTOs discovered prior to aircraft entry into ISO unless previously agreed upon at pre-dock meeting.

18.40.2. (Added) Responsibilities:

18.40.2.1. (Added) AMXS will:

18.40.2.1.1. (Added) Coordinate with the ISO Dock Chief, not later than the pre-dock meeting, to identify any additional requirements (e.g. special inspections, TCTOs, delayed discrepancies requiring additional time or resources, etc.).

18.40.2.1.2. (Added) Ensure compliance with the following input condition and configuration:

18.40.2.1.2.1. (Added) (C130 only) All pre-ISO engine trim checks are completed and annotated. Pre-coordinate with the ISO Dock Chief to enable an MXS propulsion specialist to sit in on the run. All Pre-ISO engine run reportable discrepancies will be annotated in the AFTO Form 781A forms binder with a job control number. Major discrepancies requiring AMXS assistance will be coordinated at the pre-dock meeting.

18.40.2.1.2.2. (Added) (C-130 only) Pre-ISO pressure checks and maintenance are completed and results are documented.

18.40.2.1.2.3. (Added) Aircraft is fully serviced with liquid oxygen (LOX) and system shut-off valve closed.

18.40.2.1.2.4. (Added) (C130 only) Remove dual rails to the dual rail shop and install stress bolts.

18.40.2.1.2.5. (Added) Remove any -21 equipment, previously agree to at the predock meeting, from aircraft prior to day one of ISO.

18.40.2.1.2.6. (Added) Defuel C-130 aircraft to authorized jacking weights with the main and external tanks empty.

18.40.2.1.2.7. (Added) Wash and lube (if at all possible) aircraft IAW applicable technical data to include the opening and washing of all engine cowlings.

18.40.2.1.3. (Added) Deliver aircraft to the inspection dock as scheduled.

18.40.2.1.4. (Added) Ensure that the dedicated and/or assistant crew chief accompany the aircraft through the inspection.

18.40.2.1.5. (Added) Ensure specialists needed to support maintenance in the dock are available when required and as agreed upon during the pre-dock meeting, between the OS and inspection dock supervision.

18.40.2.1.6. (Added) Verify that all post washing lubrication requirements are completed.

18.40.2.2. (Added) ISO Dock Chief or Coordinator will:

18.40.2.2.1. (Added) Review and annotate as required the AF Form 2410, *Inspection/TCTO Planning Check sheet*, at the pre-dock meeting. All maintenance requiring specialist and crew chief support will be annotated.

18.40.2.2.2. (Added) Coordinate with the responsible maintenance organization regarding discrepancies not listed on AF Form 2410.

18.40.2.2.3. (Added) Verify that the owning AMU has annotated and ordered parts for delayed discrepancies prior to the aircraft rolling into the hangar for ISO inspection.

18.40.2.2.4. (Added) Exercise functional authority and control over personnel working on the aircraft during the ISO inspection.

18.40.2.2.5. (Added) Notify QA when the aircraft is ready for a Quality Verification Inspection (QVI).

18.40.2.2.6. (Added) Notify the 86 MOS MOC of changes in aircraft status (e.g. Partially Mission Capable Supply (PMCS) to Not Mission Capable Maintenance (NMCM), or any other status change combination).

18.40.2.2.7. (Added) Maintain the aircraft AFTO 781 series forms during the inspection process IAW TO 00-20-5.

18.40.2.2.8. (Added) Ensure AF Form 2410 work has been completed and that all closed discrepancies have been cleared from Core Automated Maintenance System (CAMS). In the event CAMS was not available to permit 100% clearance prior to scheduled post dock, verify all closed discrepancies by annotating the most recent CAMS (SCREEN #380) printout and clear CAMS upon return of on-line processing.

18.40.2.2.9. (Added) When maintenance discrepancies are discovered during inspection but are not able to be worked during the ISO due to parts non-availability or scheduled ISO flow constraints, coordinate open discrepancies prior to aircraft being sold back to the flight line.

18.40.2.2.10. (Added) Return the original AF Form 2410 and ISO inspection AFTO Form 781As transcribed to the 86 MOS/MOF PS&D at the post-dock meeting.

18.40.2.2.11. (Added) Return the original AF Form 2410 and ISO inspection AFTO Form 781As transcribed to the 86 MOS/MOF PS&D at the post-dock meeting.

18.40.2.2.12. (Added) Report to the 86 MOS PS&D all unscheduled time change item (TCI) replacements and the replacement or repair of any other components requiring history records to be annotated IAW the applicable-6 at the post dock meeting.

18.40.2.2.13. (Added) Notify 86 MXG/QA and 86 MOS PS&D of any items changed requiring functional check flight (FCF).

18.40.2.2.14. (Added) Ensure that all ISO lubrication requirements not covered by post washing lubrication procedure will be documented in the AFTO Form 781s.

18.40.2.3. (Added) 86 MOS Engine Management personnel will:

18.40.2.3.1. (Added) Review engine records of aircraft scheduled for inspection and determine which TCI and TCTOs will be included in the inspection contract.

18.40.2.3.2. (Added) Ensure that the necessary propulsion TCI, TCTO, parts or kits are available.

18.40.2.3.3. (Added) Provide propulsion TCTO and TCI requirement forecasts to OS PS&D.

18.40.2.4. (Added) 86 MOS/MOF PS&D will:

18.40.2.4.1. (Added) Schedule the basic inspection, the job flow package, special inspections, TCIs and TCTOs in CAMS.

18.40.2.4.2. (Added) Provide the ISO Dock Chief or Coordinator with a draft of the AF Form 2410 at least 3 duty days prior to the scheduled ISO start date (for requirements planning purposes).

18.40.2.4.3. (Added) Schedule and chair the pre- and post-dock meetings.

18.40.2.4.3.1. (Added) This meeting is conducted to discuss and agree upon the proposed AF Form 2410.

18.40.2.4.3.2. (Added) The meeting will be held before the aircraft inspection is scheduled to begin.

18.40.2.4.3.3. (Added) The following work centers will be represented: 86 MOS/MOF PS&D, ISO Dock Chief or Coordinator, Dedicated and/or Assistant crew chief (with aircraft forms), AMU Production Supervisor, 86 MXS Production Supervisor.

18.40.2.4.4. (Added) Prepare and coordinate a maintenance contract using AF Form 2410 for all inspections to be performed during the ISO inspection.

18.40.2.4.5. (Added) Schedule workable TCTOs.

18.40.2.4.6. (Added) Schedule all overdue time change items as well as those which will become due nearest to the inspection being planned.

18.40.2.4.7. (Added) Schedule workable delayed discrepancies, including paint and corrosion control.

18.40.2.4.8. (Added) Retrieve and maintain in the aircraft jacket file the last inspection package through a complete inspection cycle (inspections #1 through #4); *(Replace #1 ISO packages with the latest #1 package, replace #2 with the latest #2, etc.).*

18.40.2.4.9. (Added) Accomplish a post-dock prior to the first flight after inspection. Retrieve and maintain as a minimum:

18.40.2.4.9.1. (Added) The original AF Form 2410 from the inspection dock chief.

CAMS SCREEN #122 of the completed ISO inspection Job Flow Package.

18.40.2.4.9.2. (Added) The Dedicated Crew Chief (DCC) will:

18.40.2.5. (Added) Transcribe the aircraft forms prior to the pre-dock meeting.

18.40.2.5.1. (Added) Ensure that parts on hand to support delayed discrepancies, special inspections, TCTOs, or heavy maintenance to be accomplished during the ISO are transferred to the ISO hangar, with the aircraft, when the ISO inspection begins.

18.40.2.5.2. (Added) Coordinate in advance of the scheduled inspection with the 86 MOS/MOF PS&D to ensure that delayed discrepancies that require 86 MXS support can be supported and worked during the scheduled inspection.

18.40.2.5.3. (Added) Correct and reseal pressurization discrepancies identified during Pre-ISO preservation checks.

18.40.2.5.4. (Added) 86 MOS Maintenance Data Systems Analysis Section (MDSA) will track and measure the pre-ISO, the ISO, and the post-ISO flow. Provide the ISO Dock Chief a semiannual analysis depicting the average flow time and the NMCM/S/B work unit codes.

18.40.2.6. (Added) Aircraft Acceptance Responsibilities at Conclusion of Inspection:

18.40.3. (Added) 86 MXS will:

18.40.3.1. (Added) Work the aircraft to bring it back to FMC status or until all possible inspection related work is completed.

18.40.3.1.1. (Added) Correct or reseal pressurization and decreased decay level discrepancies identified during post-ISO pressurization checks not previously identified during the Pre-ISO pressurization checks.

18.40.3.1.2. (Added) Prepare the aircraft for any follow-on fuel cell maintenance during the course of the inspection.

18.40.3.1.3. (Added) Transcribe aircraft forms prior to post-dock records review. Perform a review of all discrepancy worksheet (Gig Sheets), to ensure all discrepancies not completed, are transcribed into the AFTO Form 781As.

18.40.3.1.4. (Added) Perform a post-dock record review.

18.40.3.1.5. (Added) Provide a point of contact for any unfinished heavy maintenance at time of post-dock. Ensure continuity throughout completion of task(s).

18.40.3.2. (Added) The applicable AMU will:

18.40.3.2.1. (Added) Complete any or all remaining backline runs and operational checks when any part is canned that prevents the start or completion of the scheduled backline.

18.40.3.2.2. (Added) Install and operationally check components that were cannibalized before or during the inspection unless they are normally removed to facilitate an inspection requirement. Also accomplish carded inspection items that could not be accomplished due to the cannibalized items.

18.40.3.2.3. (Added) Install and operationally check parts cannibalized before or during the inspection and not received in time to accomplish required operational checks.

18.41. (Added) Local Aerospace Ground Equipment Procedures. **NOTE:** Applicable to all Ramstein Air Base units.

18.41.1. (Added) Towing AGE:

18.41.1.1. (Added) No AGE tow vehicle will operate within 25 feet of any aircraft without a spotter. AGE will not be backed into position unless a spotter is present and the unit is too heavy for one person to push.

18.41.1.1.1. (Added) No more than two units will be towed in tandem. Tow vehicles with multiple pintle hooks may tow two small units in tandem on both sides (i.e., heaters and MC-2A Compressors).

18.41.2. (Added) Damage/Mishap Reporting: Damage to AGE equipment will be immediately reported to the 86 MXS Production Supervisor and AGE Flight Production Supervisor. USAFE Form 281, **Supervisor's Report of Mishap**, or applicable MAJCOM form for tenant units, will be generated as soon as possible to determine the cause of the incident and to preclude future occurrences.

18.41.3. (Added) Prior to use inspections will be accomplished on all powered and non-powered AGE to ensure serviceability. Users will not document prior to use inspections on the AFTO Form 244.

18.41.4. (Added) The AGE Flight is responsible for the delivery of powered AGE to aircraft and munitions maintenance activities. The AGE Flight is responsible for assisting the user in movement of non-powered AGE (NPA) during emergency situations. The AGE Flight will pick-up and deliver NPA to the AGE Repair and Inspection sections to facilitate maintenance.

18.41.5. (Added) User responsibilities:

18.41.5.1. (Added) When equipment is no longer required, the user will configure AGE for towing prior to pickup. Users will disconnect and properly stow all cables/hoses, lower platforms and install lock pins and rails on maintenance stands/light carts, remove all foreign objects, secure panels and position AGE away from the immediate vicinity of aircraft to facilitate towing.

18.41.5.2. (Added) When equipment is no longer required, users will notify AGE dispatch driver for pick-up.

18.41.5.3. (Added) Using organization personnel are responsible for towing fire bottles, engine trailers, and other non-AGE equipment.

18.41.5.4. (Added) When aircraft maintenance stands are parked and not in use, a minimum of two brakes will be set, equipment not so equipped, will be chocked. Lock pins must be installed on maintenance stand platforms at all times. Powered AGE will have all brakes set when parked. Jacks not in use will be lowered and covers installed.

18.41.5.5. (Added) Users will monitor nitrogen and oxygen servicing cart product levels and inform the AGE dispatch driver when servicing is required. Users will refill aircraft oil servicing carts and hydraulic servicing carts as needed.

18.41.5.6. (Added) Prior to use inspections will be accomplished on all AGE to ensure serviceability. Users will not document prior to use inspections on the AFTO Form 244.

18.41.5.7. (Added) Users will monitor fuel levels and notify AGE driver or AGE Dispatch section in a timely manner to allow for sufficient time for swapping equipment.

18.41.5.8. (Added) When aircraft maintenance stands are parked and not in use, a minimum of two brakes will be set. Lock pins must be installed on maintenance stand platforms at all times. Powered AGE will have all brakes set when parked. Jacks will be lowered and covers will be installed.

18.41.5.9. (Added) All oil servicing carts used on OAP affected oil systems will be sampled and delivered to the OAP Laboratory every seven days (user responsibility) or whenever a drain and flush is accomplished (Aerospace Ground Equipment flight responsibility).

18.41.5.10. (Added) Aerospace Ground Equipment Flight will establish procedures and provide them to user personnel to properly annotate the oil carts' AFTO Form 244's to track and document samples and results. These procedures to be approved by the 86 MXS Supervision.

18.42. (Added) PAINT TOUCH-UP PROCEDURES IN HANGARS 1 AND 2.

18.42.1. (Added) General. Aircraft require periodic paint touch-up to protect exposed metal surfaces from corrosion due to exposure from natural elements and corrosive agents. Building 2210 (Hangar 1) is the only facility authorized for spray paint touch-up for aircraft.

18.42.2. (Added) Policy. Touch-up is defined as a total surface area not exceeding 162 square feet (i.e., leading edges of the wings, and the leading edges of the horizontal, and vertical stabilizer). Spray paint touch-up operations on Ramstein Air Base will be limited to a total of four operations per month. Spray painting operations are also limited to 4 quarts (less than 9 kilograms) of paint in a 24-hour period. The 37th Aircraft Maintenance Unit (37 AMU) and the 76th Aircraft Maintenance Unit (76 AMU) must coordinate with the 86th Maintenance Squadron (86 MXS), Aircraft Structural Maintenance Element (ASMS) to determine paint touch-up requirements. The 76th Aircraft Maintenance Unit (76 AMU) maintenance contractors are responsible for maintaining paint requirements for their C-20 and C-21 aircraft. The applicable AMU, PS&D, and 86 MXS Fabrication Flight will coordinate and schedule paint touch-up with 86 MXS Supervision according to the extent of coating deterioration and aircraft availability. The aircraft owning organization will coordinate hangar space and aircraft downtime with the 86th Airlift Wing Plans and Scheduling Office according to the paint touch-up requirements. Due to the limited amount of spray painting allowed in these hangars, all removable parts will be routed to the ASMS in building 2151 or the corrosion control section in building 2340 for painting. All affected aircraft parts and surfaces will be cleaned by the owning organization prior to the paint touch-up. All painting will be accomplished in accordance with local and host nation environmental limitations and regulations; and policies set forth by technical orders, AFOSH standards, 86th Civil Engineer Squadron, Fire Protection Flight (86 CES/CEF) and Environmental Management Flight (86 CES/CEV), and the 86th Aerospace Medical Squadron, Bioenvironmental Engineering Flight (86AMDS/SGPB).

18.42.3. (Added) Procedures:

18.42.3.1. (Added) Personnel Requirements:

18.42.3.1.1. (Added) All paint personnel must be on the Respiratory Protection Program. They must be trained and fit-tested by 86 AMDS/SGPB. Personal Protective Equipment (PPE) is required in accordance with AFOSH Standard 48-137, paragraph 4.2.2.12.

18.42.3.1.2. (Added) Personnel must also wear coveralls, paint hoods, gloves, and boot covers to protect exposed skin from paint spray mist. The 86 MXS/ASMS will provide all personnel protective safety equipment and tools.

18.42.3.2. (Added) Equipment requirements:

18.42.3.2.1. (Added) Two (2) fire extinguishers (150 pound Halon).

18.42.3.2.2. (Added) Maintenance stands as required.

18.42.3.2.3. (Added) High reach (deicer unit), as required. ASMS will provide the operators.

18.42.3.2.4. (Added) High Volume Low Pressure (HVLP) spray equipment must be used. The equipment will be operated in accordance with manufacturer recommendations. The HVLP equipment, when used properly, will help reduce air emissions generated during operations.

18.42.3.3. (Added) 37 and 76 AMUs will:

18.42.3.3.1. (Added) Schedule aircraft downtime for paint.

18.42.3.3.2. (Added) Schedule aircraft for wash, prior to painting. A spot clean-up will be accomplished, as required, for specific location touch-up.

18.42.3.3.3. (Added) Schedule job through Core Automated Maintenance System (CAMS) to ASMS.

18.42.3.3.4. (Added) Tow aircraft to hangar for painting.

- 18.42.3.3.5. (Added) Ensure aircraft is properly hangared using hangaring checklist.
- 18.42.3.3.6. (Added) Ensure all panels being painted are properly installed.
- 18.42.3.3.7. (Added) Remove and transport removable parts to the ASMS for touch-up requirements.
- 18.42.3.3.8. (Added) Ensure paint write-ups are entered in CAMS and AFTO Forms 350, **Repairable Item Processing Tag**, are filled out for parts taken to the ASMS for paint.
- 18.42.3.4. (Added) 86 MXS/MXMFS will:
 - 18.42.3.4.1. (Added) Post warnings signs at all entrances notifying personnel of painting operations stating "WARNING, PAINTING IN PROGRESS. DO NOT ENTER."
 - 18.42.3.4.2. (Added) Maintain an entry control log for signing in and out while painting in the hangar.
 - 18.42.3.4.3. (Added) Maintain a paint usage log showing type of paint, quantity mixed, quantity sprayed, and quantity disposed of as hazardous waste.
 - 18.42.3.4.4. (Added) Ensure only Aircraft Structural Maintenance (2A7X3) personnel with the appropriate PPE are in the hangar during the paint operation.
 - 18.42.3.4.5. (Added) Ensure aircraft is grounded during the painting operation.
 - 18.42.3.4.6. (Added) Position fire extinguishers at designated locations (entrances to hangar).
 - 18.42.3.4.7. (Added) Ensure supervisor of the paint operation contacts the 86 CES/CEF, Assistant Chief at 480-7683, and the 37 AS Life Support Section at 480-6033, prior to painting.
 - 18.42.3.4.8. (Added) Ensure personnel comply with all health and safety precautions.
 - 18.42.3.4.9. (Added) Perform required aircraft painting.
 - 18.42.3.4.10. (Added) Clear paint write-ups in CAMS.
- 18.42.4. (Added) Paint Operation. The following guidelines will apply for touch-up painting on 86th Air-lift Wing assigned C-130 and C-9 aircraft. **NOTE:** The maximum amount of primer and paint (combined) used will not exceed 1 quart per hour, and will not exceed 4 quarts in a 24-hour period. Spray paint operations are limited to not more than four instances (touch-ups) per month for the entire base.
 - 18.42.4.1. (Added) The following safety precautions must be followed prior to painting in Hangar 1.
 - 18.42.4.1.1. (Added) The paint crew will consist of two individuals, one painting and one observing. Paint operation will be done during swing shift or mid shift hours.
 - 18.42.4.1.2. (Added) To reduce the potential explosion hazard during the spray painting operation the hangar doors will be fully opened to allow for ventilation.
 - 18.42.4.2. (Added) Prior to painting, the aircraft will be prepared using the following processes:
 - 18.42.4.2.1. (Added) Sand the polyurethane paint system using a Nilfist Hepa filter (or equivalent) self-contained vacuum orbital sander.
 - 18.42.4.2.2. (Added) Use only approved Methyl Ethyl Ketone substitute (as approved by AF technical order for each specific airframe) and cleaning rags to clean the sanded areas.
 - 18.42.4.2.3. (Added) Repair damaged chromate conversion coating.
 - 18.42.4.2.4. (Added) Mask the areas with barrier paper and masking tape.

18.42.4.3. (Added) The painting operation will require the use of the following materials:

18.42.4.3.1. (Added) Epoxy Polyimide primer (MIL-P-23377F).

18.42.4.3.2. (Added) Polyurethane top coat (MIL-C-83286) color to match aircraft paint scheme.

18.42.4.3.3. (Added) Aircraft coating thinner (MIL-T-81772B).

18.42.4.3.4. (Added) Chromate Conversion Coating (MIL-C-81706).

18.42.4.4. (Added) The paint will be applied using HVLP spray equipment.

18.42.5. (Added) After Paint Procedures:

18.42.5.1. (Added) All paint equipment will be cleaned at the corrosion control shop in building 2340. Hazardous materials will be disposed of at the corrosion control shop hazardous waste accumulation point.

18.42.5.2. (Added) Due to the potential hazardous nature of the remaining over-spray, engineering controls limiting over-spray will be implemented to the maximum extent possible. 86 AMDS/SGPB will be consulted for sampling to determine additional cleanup requirements.

18.43. (Added) PAINT TOUCH-UP PROCEDURES IN HANGAR 1 AND AIRCRAFT MARKINGS ON C-130 AND C-9 AIRCRAFT.

18.43.1. (Added) General. Aircraft require periodic paint touch-up to protect exposed metal surfaces from corrosion due to exposure from natural elements, corrosive agents and to standardize markings. Aircraft markings will be applied in conjunction with aircraft paint touch-up. Building 2210 (Hangar 1) is the only authorized facility used for spray paint touch-up and for spray painting aircraft markings.

18.43.2. (Added) Policy. Touch-up is defined as a total surface area not exceeding 162 square feet (i.e., leading edges of the wings, and the leading edges of the horizontal, and vertical stabilizer). Spray paint touch-up operations on Ramstein Air Base will be limited to a total of four operations per month. Spray painting operations are also limited to 4 quarts (less than 9 kilograms) of paint in a 24-hour period. The 37th Aircraft Maintenance Unit (37 AMU) and the 76th Aircraft Maintenance Unit (76 AMU) must coordinate with the 86th Maintenance Squadron (86 MXS), Aircraft Structural Maintenance Section (ASMS) to determine paint touch-up and aircraft marking requirements for C-130 and C-9 aircraft. The 76th Aircraft Maintenance Unit (76 AMU) maintenance contractors are responsible for maintaining paint requirements for their C-20 and C-21 aircraft. The ASMS section will apply all standard aircraft markings in accordance with AFI 21-105 USAFESUP1 and this instruction by spray painting or the use of decals. The aircraft owning organization will coordinate and schedule paint touch-up with 86 MXS Supervision according to the extent of coating deterioration and aircraft availability. The aircraft owning organization will coordinate hangar space and aircraft downtime with the 86th Airlift Wing Plans and Scheduling Office according to the paint touch-up requirements. Due to the limited amount of spray painting allowed in this hangar, all removable parts will be routed to ASMS in building 2151 or the corrosion control section in building 2340 for painting. All affected aircraft parts and surfaces will be cleaned by the owning organization prior to the paint touch-up. All painting will be accomplished in accordance with local and host nation environmental limitations and regulations; and policies set forth by technical orders, AFOSH standards, 86th Civil Engineer Squadron, Fire Protection Flight (86 CES/CEF, Environmental Management Flight (86 CES/CEV), 86th Aerospace Medical Squadron and Bioenvironmental Engineering Flight (86 AMDS/SGPB).

18.43.3. (Added) Procedures:

18.43.3.1. (Added) Personnel Requirements:

18.43.3.1.1. (Added) All ASMS personnel required to paint must be on the Respiratory Protection Program, IAW AFOSH 48-137. They must be trained and fit-tested by Bioenvironmental Health office (86 AMDS/SGPB).

18.43.3.1.2. (Added) Personnel must wear coveralls, paint hoods, gloves, and boot covers when applying coatings for touch-up purposes or markings by spray painting.

18.43.3.2. (Added) Equipment requirements:

18.43.3.2.1. (Added) Two fire extinguishers (150 lb. halon) when painting.

18.43.3.2.2. (Added) Maintenance stands as required.

18.43.3.2.3. (Added) High Reach (de-icer unit), as required. ASMS will provide the operators.

18.43.3.2.4. (Added) High Volume Low Pressure spray equipment will be used. The equipment will be operated in accordance with manufacturer recommendations. The HVLP equipment, when used properly, will reduce air emissions generated during operations.

18.43.3.2.5. (Added) Tiger Vac or equivalent High Efficiency Particulate Air (HEPA) vacuum sanders will be used.

18.43.3.2.6. (Added) The Portable Air Pollution Control equipment unit (PAPCE) will be used in enclosed areas such as wheel wells and aircraft interiors.

18.43.3.3. (Added) 37 and 76 AMU Responsibilities:

18.43.3.3.1. (Added) Schedule aircraft downtime for paint or markings to be applied.

18.43.3.3.2. (Added) Schedule aircraft for wash prior to painting or applying aircraft markings. Spot clean up will be accomplished as required, for specific location touch-up.

18.43.3.3.3. (Added) Schedule job through Core Automated Maintenance System (CAMS) to ASMS.

18.43.3.3.4. (Added) Enter required write-ups in aircraft forms.

18.43.3.3.5. (Added) Tow aircraft to hangar for painting or applying the required markings and ensure hangar checklist is followed.

18.43.3.3.6. (Added) Disconnect main and SCNS batteries.

18.43.3.3.7. (Added) Remove and transport removable parts to the Corrosion Section, Building 2340 for touch-up requirements.

18.43.3.3.8. (Added) Ensure paint write-ups are entered in CAMS and AFTO 350, **Repairable Item Processing Tag**, are filled out for parts taken to the ASMS for paint.

18.43.3.4. (Added) 86 MXS Structural Maintenance Section Responsibilities:

18.43.3.4.1. (Added) Post warnings signs at all entrances notifying personnel of painting operations stating, "WARNING, PAINTING IN PROGRESS. DO NOT ENTER."

18.43.3.4.2. (Added) Ensure aircraft is properly grounded.

18.43.3.4.3. (Added) Position fire extinguisher at designated locations (entrance to hangar).

18.43.3.4.4. (Added) Maintain a paint usage log showing type of paint, quantity mixed/used and disposed of as hazardous waste.

18.43.3.4.5. (Added) Ensure supervisor of the paint operation contacts the 86 CES/CEF, Assistant Chief at 480-7683 and the 37 AS Life Support Section at 480-6033, prior to painting.

18.43.3.4.6. (Added) Ensure only Aircraft Structural Maintenance (2A7X3) personnel with the appropriate PPE are in the hanger during the paint operation.

18.43.3.4.7. (Added) Ensure personnel comply with all health and safety precautions.

18.43.3.4.8. (Added) Annotate the aircraft forms to reflect applied masking materials.

18.43.3.4.9. (Added) Apply required paint and aircraft markings.

18.43.3.4.10. (Added) Document corrective actions in CAMS and aircraft forms.

18.43.4. (Added) Paint Operation. The following guidelines will apply for touch-up painting and stencil application on assigned aircraft. **NOTE:** The maximum amount of primer and paint (combined) used will not exceed 1 quart per hour, and will not exceed 4 quarts in a 24-hour period. Spray paint operations are limited to not more than four instances (touch-ups) per month for the entire base.

18.43.4.1. (Added) The following safety precautions must be followed prior to painting.

18.43.4.1.1. (Added) The paint crew will consist of two individuals, one painter and one observer. Paint operation will be conducted only during swing shift or mid shift hours.

18.43.4.1.2. (Added) To reduce the potential explosion hazard during the spray-painting operation, the hangar doors will be fully opened to allow for ventilation (weather permitting).

18.43.4.2. (Added) Prior to painting, the aircraft will be prepared using the following processes:

18.43.4.2.1. (Added) Sand polyurethane paint system using a Tiger Vac and vacuum sander.

18.43.4.2.2. (Added) Use only approved Methyl Ethyl Ketone substitute (as approved by AF technical order for each specific airframe) and cleaning rags to clean sanded areas.

18.43.4.2.3. (Added) Repair any damaged chromate conversion coating.

18.43.4.2.4. (Added) Mask areas with barrier paper and masking tape to prevent over spray onto unpainted surfaces.

18.43.4.3. (Added) The painting operation will require the use of the following materials:

18.43.4.3.1. (Added) Epoxy Polyamide primer (MIL-P-23377F).

18.43.4.3.2. (Added) Polyurethane top coat (MIL-C-83286) color to match aircraft paint scheme.

18.43.4.3.3. (Added) Aircraft coating thinner (MIL-T-81772B).

18.43.4.3.4. (Added) Chromate Conversion Coating (MIL-C-81706) or Alodine 1132 sempens for minor repairs to damaged conversion coating.

18.43.4.4. (Added) The paint will be applied using HVLP spray equipment.

18.43.5. (Added) After Paint procedures:

18.43.5.1. (Added) All paint equipment will be cleaned at the corrosion control shop in building 2340. Hazardous materials will be disposed of at the corrosion control shop's hazardous waste accumulation point.

18.43.5.2. (Added) Due to the potential hazardous nature of the remaining over-spray, engineering controls limiting over-spray (PAPCE) will be implemented to the maximum extent possible. 86 AMDS/SGPB will be consulted for sampling to determine additional cleanup requirements.

18.43.6. (Added) C-130 Paint Scheme. The following specifications will apply for special markings on 86 AW assigned C-130 aircraft.

18.43.6.1. (Added) Tail flash marking will be 11 and 3/8 inches tall, blue and white checkerboard, oriented in a diamond pattern. The top of the tail flash will be at vertical stabilizer station 257. The tail flash will extend from the leading edge of the vertical stabilizer to the trailing edge of the rudder. The 86 MXS and 37 AMU will have joint responsibility for removing the tail flash in the most expedient manner in the event of a contingency, which requires its removal.

18.43.6.2. (Added) Command aircraft will have the unit designator (86 AW, 86 OG, and 37 AS) centered 7 inches below aircraft tail number on the vertical stabilizer. These markings will be 15 inches in height and flat black in color. The "RS," tail numbers, and unit designator on tail will be highlighted (shadowed) in contrasting gray color, color number 36357. The wing designated command aircrafts are 1274/86 AW and 0943/86 OG.

18.43.6.3. (Added) The tail number will be last three numbers of the aircraft serial number, 15 inches in height. It will be centered between FS 1068 and 1122, with bottom of the numbers on vertical stabilizer station 36. The "AF" and last two numbers of the model year will be 6 inches in height; these numbers will be located 3 inches directly below the "AF".

18.43.6.4. (Added) The placement of the armament placard will be located 14 inches aft of the crew entrance doorframe and centered on WL 169.

18.43.6.5. (Added) The USAFE insignia will be located 6 inches above the window frame on both sides of the fuselage centered at FS 277 and will be 24" in height.

18.43.6.6. (Added) The 86th Airlift Wing insignia will be located on the left side of wing command designated aircraft only and positioned 6 inches above window frame, centered on FS 317 and will be 24" in height.

18.43.6.7. (Added) The nose number will be 6-inch gothic letters and consist of the last 4 digits of the aircraft serial number. It will be centered on FS 134 and WL 192 on both sides of the forward fuselage.

18.43.6.8. (Added) The "86 AW" will be 6-inch gothic letters and centered on FS 134, six inches below the nose number on both sides of the forward fuselage.

18.43.6.9. (Added) Pilot names will be centered on FS 124 with the bottom of the name located at WL 233. Letter height will be two inches (2") and in Zapfchanc.reva font with a color number 37038. Command designated aircraft pilot names will be shadowed with color number 36440.

18.43.6.10. (Added) Dedicated and Assistant Crew Chief names will be centered between F.S. 204 and 240 and the lower edge of the assistant will be located at WL 195, with the Dedicated Crew Chief name two inches (2") above the assistant. Letter height will be two inches (2") and in Zapfchanc.reva font with a color number 37038. Command designated aircraft names will be shadowed with color number 36440. All names will have rank, first name initial, and last name.

18.43.6.11. (Added) Decals may be used in place of painted markings.

18.44. (Added) CORROSION CONTROL.

18.44.1. (Added) General. All personnel working around aircraft and ground support equipment should be continuously alert for the signs of corrosion during their daily maintenance activities. Corrosion discrepancies will be properly documented and scheduled for treatment.

18.44.2. (Added) 86th Maintenance Group responsibilities:

18.44.2.1. (Added) Appoint the 86th Maintenance Squadrons (86 MXS), Aircraft Structural Maintenance Section (ASMS) as the 86 AW point of contact (POC) for all issues pertaining to corrosion and the procurement and use of aircraft cleaning compounds.

18.44.2.2. (Added) Appoint the 86 AMXS as (POC) for the procurement of aircraft wash equipment and supplies with the exception of aircraft cleaning compounds. This includes personal protective equipment (PPE) and fall protection gear in accordance with applicable directives.

18.44.2.3. (Added) 86 MXS, Aircraft Structural Maintenance (MXMFS) Section responsibilities:

18.44.2.3.1. (Added) Provide technical guidance to all 86 AW units regarding current corrosion prevention and control programs upon request.

18.44.2.3.2. (Added) Procure all aircraft cleaning compounds and ensure only those authorized are being used during aircraft washes IAW applicable technical Orders and that they meet local environmental standards.

18.44.2.3.3. (Added) Be the 86 AW POC for all requests to use the aircraft paint barn located in building 2151.

18.44.2.3.4. (Added) Maintain and update aircraft post wash corrosion inspection checklists for assigned C-9 and C-130 aircraft.

18.44.2.3.5. (Added) Perform post-wash corrosion inspections for assigned C-9 and C-130 aircraft. (Not required for isochronal inspection (ISO) washes, a more in-depth corrosion inspection is performed during ISO maintenance.)

18.44.2.3.6. (Added) Document corrosion discrepancies found during corrosion inspections in the aircraft AFTO Form 781A and the Core Automated Maintenance System (CAMS).

18.44.2.3.7. (Added) Sign off the post wash corrosion inspection in AFTO Form 781A and CAMS upon completion of inspection.

18.44.2.3.8. (Added) Maintain an individual aircraft corrosion and structural file, detailing any significant corrosion and structural defects and their repairs.

18.44.2.3.9. (Added) Maintain individual aircraft paint scoring sheets required to determine local paint touch up or programmed depot maintenance (PDM).

18.44.2.3.10. (Added) Assist the 86th Maintenance Group Quality Assurance section in the scoring of paint during aircraft acceptance inspections.

18.44.2.4. (Added) 86 MXS Aero Repair Section responsibilities:

18.44.2.4.1. (Added) Remove the C-130 cargo ramp prior to the ISO wash ONLY. This action is to facilitate a thorough cleaning and corrosion inspection of the fuselage station (FS) 737-bulkhead area.

18.44.2.4.2. (Added) Perform required cargo ramp removal documentation.

18.44.2.5. (Added) 86 MXS Aerospace Ground Equipment (AGE) Flight responsibilities:

18.44.2.5.1. (Added) Inspect all AGE protective coatings in accordance with local standard operating procedures as established by 86MXS/MXMFS and AGE production supervision. AGE will be scheduled for paint touch-up, complete overcoat or strip and paint based on the equipment's current corrosion protection and not solely for appearance purposes.

18.44.2.5.2. (Added) Coordinate all corrosion protection applications for AGE with the ASM Corrosion Control section.

18.44.2.5.3. (Added) Provide all personnel and required protective equipment for the preparation of AGE prior to painting.

18.44.2.6. (Added) 86th Maintenance Operations Squadron responsibilities:

18.44.2.6.1. (Added) Schedule assigned C-9 and C-130 aircraft for wash through the 86 AW Plans and Scheduling office.

18.44.2.6.2. (Added) Schedule pre-ISO washes as close to the ISO input date as possible, but not earlier than 7 duty days prior to. Deviation from this requirement will be coordinated with 86 MXS supervision.

18.44.2.6.3. (Added) Supply adequate lubrication products and equipment at the aircraft wash rack location to facilitate post-wash lubrication requirements.

18.44.2.6.4. (Added) Ensure the C-130 aircraft cargo handling dual rail system is removed prior to the wash. (ISO wash only).

18.44.2.6.5. (Added) Remove the C-130 cargo compartment center floor panels from F.S. 245 through F.S. 737 to allow for a thorough cleaning of the under floor structure. (Pre #4 ISO wash only).

18.44.2.6.6. (Added) Ensure when practical, the aircraft remains in the hangar until all wash and corrosion inspections are completed. This will allow any additional cleaning if determined by the wash rack supervisor, corrosion inspector, or Quality Assurance Inspector.

18.44.2.7. (Added) 86 AMXS responsibilities:

18.44.2.7.1. (Added) Appoint a wash rack manager.

18.44.2.7.2. (Added) Provide five qualified crewmembers from the 37th Aircraft Maintenance Unit (37 AMU) and two qualified crewmembers from the 76 AMU to safely accomplish the wash within its scheduled time. Assign wash personnel to a minimum of 30 days on the wash rack unless coordinated with the wash rack supervisor.

18.44.2.7.3. (Added) Ensure all personnel are trained and signed off in AF Form 623 or CAMS for aircraft wash. If untrained personnel are dispatched to the wash rack, a sufficient number of trained personnel will also be dispatched to provide proper training during the aircraft wash.

18.44.2.7.4. (Added) Establish a "No" leaves, "No" TDY's for wash personnel to maintain adequate wash continuity. Any appointments in excess of 4 hours shall require a replacement to be assigned from the appropriate agency. Any deviation from this policy will be coordinated with the wash rack supervisor.

18.44.2.8. (Added) Wash Rack Manager responsibilities:

18.44.2.8.1. (Added) Manage wash rack facility and supervise wash team.

18.44.2.8.2. (Added) Control and maintain the aircraft wash facility and the permanently installed aircraft wash equipment and fall protection system.

18.44.2.8.3. (Added) Report any deficiency with the wash rack facility and/or permanent installed aircraft wash rack equipment to the building custodian.

18.44.2.8.4. (Added) Brief and document safety procedures to all personnel prior to aircraft wash.

18.44.2.8.5. (Added) Establish and maintain a wash rack composite tool kit (CTK).

18.44.2.8.6. (Added) Strictly enforce equipment and tool control policy.

18.44.2.8.7. (Added) Ensure all wash rack equipment and PPE are serviceable prior to use.

18.44.2.8.8. (Added) Ensure all wash personnel know the proper wear of supplied PPE. Compliance with PPE requirements is MANDATORY.

18.44.2.8.9. (Added) Coordinate with 86 MXS/MXMFS to ensure only authorized cleaning compounds are being used IAW applicable technical orders and meet local environmental standards.

18.44.2.8.10. (Added) Coordinate with 86 MXS/MXMFS to ensure an adequate level of supplies (cleaning compounds) are maintained.

18.44.2.8.11. (Added) Ensure the aircraft is safe for wash IAW hangar checklists.

18.44.2.8.12. (Added) Ensure waterproof covering or waterproof tape is applied IAW aircraft checklist 1C-130A-23CL-1 or 1C-9A-2-51.

18.44.2.8.13. (Added) Enter a red X in the aircraft forms for tape and covers applied.

18.44.2.8.14. (Added) Ensure the aircraft is washed and lubed in accordance with the applicable technical orders.

18.44.2.8.15. (Added) Sign off the aircraft wash and cleanliness inspection in the AFTO Form 781A and CAMS.

18.44.2.8.16. (Added) Ensure compliance of T.O. 1C-130A-23, section 1-6C is accomplished on the C-130 aircraft when the floorboards are removed for ISO washes.

18.44.2.8.17. (Added) Inspect under C-130 aircraft center floorboards for serviceability of flapper valves when floorboards are removed for ISO washes.

18.44.2.8.18. (Added) Keep an aircraft log on all aircraft washes and the type of wash accomplished (i.e. normal wash, ISO wash, etc.).

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

86 AW Plan 32-1, Base Disaster Preparedness Operation Plan
86 AW Plan 91-204, Mishap Response Plan
Ramstein Instruction 13-201, Air Traffic Control, Airfield Operations and Local Flying Conditions
T.O. 00-5-1, AF Technical Order System
T.O. 00-5-2, Technical order Distribution System
T.O. 1-1-691, Aircraft Weapons Systems Cleaning and Corrosion Control
T. O. 1C-130A-23, System Peculiar Corrosion Control, C-130 Aircraft
T.O. 1C-130A-2-2CL-2, Aircraft Washing and Cleaning, C-130 Aircraft
T.O. 1C-9A-2-51, Structures Manual, C-9A Aircraft
T.O. 4B-1-1, Use of Landing Gear Wheel Brakes And Wheels During Ground Operations
T.O. 35-1-3, Corrosion Prevention, Painting and Marking of USAF Equipment
LCL-86AW-1C-130A-23-1, Post Wash Corrosion Inspection
AFI 21-101, Maintenance Management of Aircraft
AFI 21-101 USAFESUP1, Maintenance Management of Aircraft
AFI 21-105, Aerospace Equipment Structural Maintenance
AFI 21-105, USAFE Supplement 1, Aerospace Equipment Structural Maintenance
AFOSH Standard 91-501, Consolidated Occupational Safety Standard
AFOSH Standard 91-100 Aircraft Flight Line - Ground Operations and Activities
ATOMS USER GUIDE

Abbreviations and Acronyms

AAFES—Army Air Force Exchange Services
ADM—Awaiting Depot Maintenance
AHCP—Alternate Hot Cargo Pad
AHE—Automated History
ALC—Air Logistics Center
ARC—Automated Records Check
ATOMS—Automated T.O. Management System
AUR—Aircraft Utilization Report

AURB—Aircraft Utilization Report (option B)

AURC—Aircraft Utilization Report (option C)

CBC—Central Base Coordinator

CD—Deputy Commander

DD—Deferred Discrepancy

ECD—Estimated Completion Date

HTSA—Host Tenant Support Agreement

ID—Initial Distribution

J-FOD—Junior FOD Committee

JML—Job Master Listing

LAN—Local Area Network

LCL—Local Checklist

LEP—List of Effective Pages

LG—Logistics Group

LTP—Local Tops Page

LWC—Local Work Cards

MPRS—Multi-Point Refueling System

MSS—Maintenance Supply Support

OC-ALC—Oklahoma City Air Logistics Center

OG—Operations Group

OPR—Office of Primary Responsibility

OSC—On-Scene Commander

PRA—Planning Requirements

QAR—Quality Assurance Representative

RCN—Report Control Number

SSAN—Social Security Account Number

SSN—Sortie Sequence Number

TCN—Transportation Control Number

TIL TCTO—Index Listing

T.O.—Technical Order

TCTO—Time Compliance Technical Order

TODA—Technical Order Distribution Account

TODO—Technical Order Distribution Office

TODS—Technical Order Distribution Sub-account

TOPS—Technical Order Page Supplements

TORSN—Technical Order Request Status Notification

WI—Wing Instruction

WTR—Workable TCTO Report

WWW—World Wide Web

Attachment 10 (Added)

A10.1. IN-PROCESS INSPECTIONS (IPI)

Table A10.1. C-130E

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	1151M/P	Center Leading Edges	T.O. 1C-130H-2-51JG-00-1, page 2-38, step i. And page 2-40, step K. (1).
	Required Action: Ensure orifice for the anti-ice valve is installed at the valve downstream connection. Ensure 4 mount bolts are installed prior to paneling up.		
2	1311S	MLG Ballscrew Trunnion	T.O. 1C-130H-2-32JG-10-1, page 2-156, step 3
	Required Action: During installation, ensure trunnion thrust washer is installed with the beveled surface facing down.		
3	13111	MLG Strut Repack	T.O. 1C-130H-2-32JG-10-1, para 2-3-3, step 5 and para 2-3-4, step 2
	Required Action: Ensure tabs on lock ring, on top of piston are engaged; ensure back-up rings are properly installed on seals; and ensure set screws and Teflon inserts are installed and properly torqued.		
4	13211	NLG Strut Repack	T.O. 1C-130H-2-32JG-20-1, para 2-2-2, step 6, 7, & 8
	Required Action: Ensure top centering cam pins are installed and secured with cotter pins; ensure back-up rings are installed on seals; ensure lower centering cam anti-rotation keys are installed when installing piston into cylinder.		
5	13521	Steering Cylinders	T.O. 1C-130H-2-32JG-50-1, para 2-3-2, step 2 and 3
	Required Action: During actuator installation, ensure roll pins are installed in top of actuator trunnion. Ensure steering bracket alignment keys are installed.		
6	13522	Steering Control Valves	T.O. 4SA3-26-3, para 6, step F
	Required Action: During build up, ensure shaft is centered on port E and travel from neutral position is 0.100 (+/- 0.014) in.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
7	13711	MLG Wheel and Tire Installation	T.O. 1C-130H-2-32JG-40-1, page 2-46, step 2 “WARNING” and page 2-48 step g
	Required Action: Prior to installation, ensure all mating surfaces and all unpainted surfaces of the axle are lubricated; ensure spacer is placed on the axle, flush with mount plate on axle; “WARNING” ensure inboard wheel bearing is correctly installed. Ensure retaining nut locking bolt is properly installed.		
8	13712	NLG Wheel and Tire Installation	T.O. 1C-130H-2-32JG-20-1, page 2-58, step 5 and page 2-59 step 9
	Required Action: Prior to installation, ensure inboard bearing, spacer, grease seal, and retaining rings are correctly installed.		
9	14244	Control Wheel Switches TrimTab Auto Pilot Release Microphone	T.O. 1C-130B-2-9, para 2-35 step b “CAUTION”; T.O. 1C-130H-2-22JG-10-1-1, task 4-10-3 page 4-104 step 3 “Warning”; page 4-104.2 step 6 warning T.O. 1C-130B-2-8, para 2-35 step d “NOTE” step h step i “note”
	Required Action: Warning: Failure to properly install trim tab switch could result in improper trim. Prior to installation of switches in housing, check positioning of switch and proper clearance of solder posts and housing. Ensure operational checks are annotated for all three systems.		
10	2213A	Engine External Scavenge Oil Pump	T.O. 1C-130H-2-79JG-00-1, 79-20-13 subtask 3-5-2, page 3-40, step a, or T.O. 2J T56-56, WP 045 00, page 3, para 3.5, steps 3, 4.
	Required Action: Inspect to see if two (2) “O” ring seals are installed prior to installation of engine external scavenge oil pump.		
11	22416	Turbine Rotor Front Bearing	T.O. 2J-T56-56, SWP 019 04, page 14 para 3-6, steps 7, 8 and 9 (-7) or SWP 019 07, page 8, para 3-5, steps f and g (-15)
	Required Action: During build up, inspect installation of front bearing.		
12	22432	Stage 2 Vane Assembly	T.O. 2J-T56-56, SWP 019 04, page 8, para 3.2, step j (-7), or SWP 19 07, page 6, para 3.3, step h (-15)
	Required Action: During build up, inspect installation of second stage turbine case assembly to ensure locating keys are in correct position.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
13	22433	Stage 3 Vane Assembly	T.O. 2J-T56-56, SWP 019 04, page 8, para 3-2, step g or SWP 19 07, page 6, para 3.3, step e. (-15)
	Required Action: During build up, inspect installation of turbine vane assembly to ensure locating keys are in correct position.		
14	22434	Stage 4 Vane Assembly	T.O. 2J-T56-56, SWP 019 04, page 5, para 3-2, step e (-7) or SWP 19 07, page 6, para 3.3, step c (-15)
	Required Action: During build up, inspect installation of turbine vane assembly to ensure all 6 vane segments are in correct position.		
15	2245B	Turbine Installation	T.O. 2J-T56-56, WP 019 00, page 12, para 3-11 steps a thru l, or T.O. 1C-130H-2-71JG-00-2, task 71-90-22, subtask 8-6-9, page 8-162 step 2
	Required Action: During installation of tie bolt, ensure proper front of vane clearance.		
16	22458	Turbine Rear Bearing	T.O. 1C-130H-2-71JG-00-2, Task 71-90-21 subtask 8-5-3, pages 8-98, 8-100, steps 7c, 9c (-7), subtask 8-5-5, pages 8-108 and 8-114, steps 1f, 8a (-15) or T.O. 2J-T56-56, SWP 019 04, page 16, para 3.8. steps g., h., s.,
	Required Action: During build-up, inspect installation of turbine rear bearing to ensure: (1) the serial number forward is forward and (2) the slot in the bearing is aligned with the slot in cage at 10 o'clock position and (3) the rear bearing clamp nut is properly torqued.		
17	22460	Turbine Rear Scavenge Pump Assembly	T.O. C-130H-2-71JG-00-2, Task 71-90-21 subtask 8-5-6, page 8-116, steps 1, 1a, 1b, 1d, 1e, 4, and subtask 8-5-3, page 8-102 step 10b. or T.O. 2J-T56-56, SWP 020 02, page 3, step a. thru h.
	Required Action: During installation, ensure the three (3) "O" ring seals are properly installed. Inspect for proper torque and safety wiring of scavenge pump housing and mount bolts.		
18	2251E	Engine Fuel Control	T.O. 1C-130H-2-73JG-00-1, Task 73-20-13, sub-task 3-6-2, page 3-56, step 6 or T.O. 2J-T56-56, WP 027 00, page 6, para 3.6, step a.
	Required Action: Prior to fuel control installation ensure the "O" ring seal is installed on hollow pin.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
19	22FAA	Engine Starter	T.O. 1C-130H-2-80JG-00-1, Task 80-10-10 subtask 1-4-3 or T.O. 1C-130B-10, pages 3-23 thru 3-25.
	Required Action: Ensure gearbox plug is removed <u>or</u> installed according to applicable starter model number. Ensure starter external splines are lubricated as applicable with starter model number.		
20	22720	Torquemeter Safety Coupling	T.O. 2J-T56-56, WP 013 00, page 7 para 3-4, steps g and h, or T.O. 1C-130H-2-71JG-00-2, page 8-56task 71-90-20, subtask 8-4-6, step 3.
	Required Action: During installation, ensure proper installation of key washer. Ensure proper installation and torque of spanner.		
21	22700	A-7 And A-15 Torquemeters	T.O. 2J-T56-56, WP 013 00,page 7 para 3-4, steps o and p, and page 7 and 8, para. 3-5, steps a and p or T.O. 1C-130H-2-71JG-00-2, task 71-90-20, subtask 8-4-7, steps b,c and subtask 8-4-9, , steps 1 and 5.
	Required Action: Ensure proper installation and torque of bolts and lock tabs. Install packing on front and aft side of torquemeter housing and ensure proper installation and torque of all nuts.		
22	32511	Propeller	T.O. 1C-130H-2-61JG-10-1, Task 61-10-11 subtask 2-1-7, page 2-42, steps 6, 7, & 8
	Required Action: Prior to rear cone installation, ensure thrust nut lock is properly installed, splined and seated. Ensure corrosion inspection and treatment is accomplished.		
23	32512	Dome Installation	T.O. 1C-130H-2-61JG-10-1, Task 61-10-11 subtask 2-1-9, page 2-52, steps 1 and 3
	Required Action: Prior to dome installation, ensure dome stop ring is correctly set so that the "14" on the ring is set at 92.5 on the rotating cam, indicating feather. Ensure all blades are set to feather.		
24	32516	Propeller Retaining Nut	T.O. 1C-130H-2-61JG-10-1, Task 61-10-11 subtask 2-1-7, page 2-46, steps 13d and 12d
	Required Action: At installation, ensure propeller retaining nut "O" rings (2) are installed and retaining nut is torqued.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
25	32516	Propeller Nut Pre-Torque Check	T.O. 1C-130H-2-61JG-10-1, Task 61-10-11 subtask 2-1-6, page 2-34, step 3e
	Required Action: Check and record torque on propeller hub nut in a tightening direction. If torque does not meet specifications then propeller shaft must be removed from service.		
26	32525	Valve Housing	T.O. 1C-130H-2-61JG-20-1, Task 61-20-02 subtask 1-2-3, page 1-48, steps 1c and 1d
	Required Action: (Exception: Not required on Uninstalled Control Assemblies) Pin beta shaft 2 less than angle noted on valve housing to compensate for backlash in beta gear train. Ensure beta pinion shaft is inserted and pinned to match blade angle setting. Ensure proper mesh of drive gear train.		
27	32523	Valve Housing Cover	T.O. 1C-130H-2-61JG-20-1, Task 61-20-02 subtask 1-2-4, page 1-54, step 5b
	Required Action: Before installing valve housing cover, rotate adjusting screw as required to align the teeth on the two input spur gears.		
28	3252E	Pump Housing Retaining Pin	T.O. 1C-130H-2-61JG-20-1, Task 61-20-01 subtask 1-1-5, page 1-28, step 9c,d
	Required Action: Step c. Install retaining ring and pin to secure propeller control in position. The pins must protrude through the barrel extension into the propeller control to prevent its movement. Step d. Install four nuts used to attach mechanical puller. Torque all six nuts securing seal retaining plate 40-50 inch-pounds		
29	32538	Slipring Installation	IAW T. O. 3H1-18-2, page 2-35, para. 2-17.1, step a
	Required Action: Install the packing seat ring and its preformed packing on the rear barrel extension with the packing seat ring relief over the tang of the beta feedback gear bushing, and retain the ring in the position by installing the deicer contact ring holder assembly. When installing the holder assembly on the rear barrel half, align the index lines on the assembly and the packing seat ring. Also align the blade arm markings on the assembly and the rear spinner. Install the eight flat washers and cap screws that retain the holder assembly. Tighten the cap screws to 9-11 pounds-feet of torque. Safety the screws together in pairs. Make sure the loose ends of the safety wire are pigtailed and do not touch the nearby sliprings or fall above the tip of the cap screws.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
30	32560	Pitch Lock Regulator	T.O. 1C-130H-2-61JG-10-1, Task 61-10-11 subtask 2-1-8, page 2-50, step 3.
	Required Action: (Exception: Not required on Prop Hyd. Post testing) Ensure externally splined spacer ring is installed; stationary ratchet and pitch lock control cam are properly indexed. Ensure cam control ring and cam lock ring are a matched set and are installed and locked properly.		
31	41424	Anti-Ice Valve	T.O. 1C-130H-2-30JG-00-1-1, page 4-10, step 2 a. "CAUTION"
	Required Action: During installation ensure orifice for the anti-ice valve is installed at the valve downstream connection.		
32	41544	NESA Window Electrical Connections	T.O. 1C-130B-2-13, page 10-9, Figure 10-8, Table 1
	Required Action: Ensure correct wires are connected to appropriate transformer taps, as per window resistance requirement.		
33	42210	Engine Driven Generators	T.O. 1C-130H-2-24JG-20-1-2, para 4-1-8, step 1.
	Required Action: Clean and inspect gearbox generator drive gear and lubricate generator input shaft or disconnect shaft as applicable.		
34	4222B	ATM Generator	T.O. 1C-130H-2-24JG-20-1-2, para 4-4-3, step 1.
	Required Action: Clean and inspect ATM generator drive gear and lubricate generator input shaft.		
35	453AA	Engine Driven Hydraulic Pump	T.O. 1C130H-2-29JG-00-1-1, para 5-1-2, step 6; T.O. 1C-130B-2-10, para 3-17.
	Required Action: Prior to pump installation, inspect splines on pump and reduction gear box for wear and apply lubrication on pump splines. Check garlock seal snap ring for proper installation.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
36	46110, 46120, 46130, 46140	Integral, Auxiliary, External and Fuselage Tanks.	T.O. 1C-130H-2-28JG-001, para 28-00-14, para 2-5-4, step 2
	Required Action: Before installing foam baffles, complete all maintenance, testing, and cleaning of tank and inspect all exposed wiring, conduits, probes, tubing, pumps, and valves for serviceability and security. Prior to tank closure inventory all tools, do not close tank until all tools have been accounted for.		
37	46110, 46120, 46130, 46140	Integral, Auxiliary, External and Fuselage Tanks	T.O. 1C-130H-2-28JG-00-1, para 28-00-12, para 2-3-1, step 1.
	Required Action: Prior to closure or foam baffle reinstallation, ensure all foreign objects are removed, all accessible wiring, plumbing and braces disturbed or removed during maintenance have been properly installed, vent system for security and vent float valves (if applicable) for freedom of operation and vent out-lets, including outside of vent for obstruction.		
38	46113	Surge Box	T.O. 1C-130H-2-28JG-00-1, para 28-00-12, para 2-3-1, step 1.
	Required Action: Prior to cover installation, ensure all foreign objects are removed, unrestricted operation of components and ensure all integral wiring and plumbing is connected.		
39	46120	Cell Cavities	T.O. 1C-130H-2-28JG-10-1, para 28-11-01, para 1-1-3, Step 1.
	Required Action: Prior to cell bladder installation, ensure all foreign objects are removed and inspect wing cavity for any loose material that may damage the cell during installation. Ensure there are no seams or sharp edges exposed on backing boards.		
40	49114	Fire extinguisher control valves	T.O. 1C-130H-2-26JG-20-1, page 2-26 step “WARNING” and step a.1.
	Required Action: Inspect to verify the proper installation and direction of control valve. Failure to comply will cause fire-extinguishing agent to be discharged in the wrong direction.		
41	49115	Fire Extinguisher	T.O. 1C-130H-2-26JG-20-1, para 2-1-3, “NOTE”.
	Required Action: During installation, inspect bonnet for proper cutter installation.		

Table A10.2. C-9A

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	13130	MLG Strut Repack	T.O.1C-9A-2-32-11-2, pages 808, step B. (1) CAUTION and 810 step 12
	Required Action: Prior to strut reassembly ensure scraper is installed with blade pointing down. Inspect inner cylinder for corrosion, scratches and proper seal arrangement.		
2	13230	NLG strut repack	T.O. 1C-9A-2-32-21-2, Page 806, Step 15
	Required Action: Ensure proper installation of O-rings and backups on strut piston.		
3	13621	NLG Wheel Installation	T.O. 1C-9A-2-32-40-2, page 204, steps A. (13) B. (1); T.O.1C-9A-2-32CL-3, page 1-2, step C15, “CAUTION”, and step D1, “NOTE”
	Required Action: Before installing wheel and tire assembly check that spacer is installed with chamfer facing outboard. Check wheel, tire, axle, seals, races, and bearings for general condition. Check bearings for correct part number, lubrication and condition.		
4	14522	Elevator Actuator	T.O. 1C-9A-2-27-30-8, page 202, para 3B, step 4, “CAUTION”
	Required Action: Make certain that bolt is installed with head down to prevent interference with structure.		
5	14810	Flap Follow-up Rod Ends	1C-9A-6, Page 2-A-004.1, para. 1.A.
	Required Action: Prior to installing inboard flap hinge fairings, ensure flap follow-up rod ends get lubed with MIL-G-81322A grease.		
6	42120	APU Driven Generator Installation	T.O. 1C-9A-2-24-20-2, page 404 step B. (2)
	Required Action: Ensure that the generator spline is lubed with anti-fretting compound before installation.		
7	42120	Engine Driven Generator Installation	T.O. 1C-9A-2-24-20-1, page 404, step 3 or T.O. 1C-9A-2-24-10-1, page 410, step B. 14
	Required Action: Ensure that the generator spline is lubed with anti-fretting compound before installation.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
8	4123E	Cabin Outflow Valve	T.O. 1C-9A-2-21-32-5, page 402, step B5, “CAUTION”
	Required Action: Be certain that butterfly valve attach bolts installed at each location are of sufficient length.		
9	42120	Engine Driven Generator	T.O. 1C-9A-2-24-20-1, page 404, step B8 or T.O. 1C-9A-2-24-10-1, page 410, step B. 18 “CAUTION”
	Required Action: Check generator installation to be sure that captive washers on mounting nuts are within spot faced area around each mounting hole of generator mounting flange.		
10	45111	Engine Driven Hydraulic Pump	T.O. 1C-9A-2-29-10-5, page 206, step B10 “CAUTION”
	Required Action: Ensure before operating the engine driven hydraulic pump, the case must be full of hydraulic fluid to prevent the pump from operating without lubrication during the self-priming period.		
11	45121	Electrically Driven Hydraulic Pump	T.O. 1C-9A-2-29-10-6, page 206, step B9 “CAUTION”
	Required Action: Ensure before operating electrically driven hydraulic pump, pump case must be full of hydraulic fluid to prevent pump from operating without lubrication during self-priming period.		
12	45281	Alternate Gear Pump	T.O. 1C-9A-2-29-10-7, page 203, step B3 “CAUTION”
	Required Action: Ensure before operating alternate gear pump, cases of both units must contain as much hydraulic fluid as possible to prevent pumps from operating without lubrication during self-priming period.		
13	1311S	Fuel Tanks	T.O. 1C-9A-2-28, page 202, step 5, “CAUTION
	Required Action: Prior to tank closure ensure all plumbing and braces disturbed during maintenance have been returned to normal, ensure vent plugs are removed if applicable, inventory tools, do not close tank until all tools have been accounted for.		
14	52AAA	Autopilot Controller	T.O. 1C-9A-2-22-10-2, page 201, step 2B(2), “CAUTION”
	Required Action: Prior to installing Automatic Pilot Controller, verify wire bundles are installed properly in the pocket shields on both the left and right lower pedestal panel covers to prevent possible chafing against control cables.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
15	52ADC	Autopilot Servodrive	T.O. 1C-9A-22-10-4, page 201, step 1D, “CAUTION”
	Required Action: The servodrives are physically identical but are not interchangeable. Before installing the new unit, check that the part numbers of the new and removed unit are the same.		
16	91112	Aft Escape Slide	T.O. 1C-9A-2-25-62-1, page 201, step B 4 NOTE, page 202, steps B 6 & 8 WARNINGS, and step B 10
	Required Action: Ensure proper position and clearance of girt bar and position of automatic firing lanyard.		
17	91112	Forward Escape Slide	T.O. 1C-9A-2-25-62-0, page 2A, Figure 1(sheet 2).
	Required Action: Ensure release lanyard is routed below and outboard of girt.		

Table A10.3. C-141

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	1128F	Fuel Tanks, Integral	T.O. 1C-141B-2-28JG-00-1 S/S/SN, 28-00-24 step a
	Required Action: Prior to tank closure inspect tank interior. Make sure all plumbing and/or braces disturbed during maintenance have been returned to normal.		
2	46A00	Fuel Tanks, Integral	T.O. 1C-141B-2-28JG-00-1 S/S/SN, 28-00-24 step b
	Required Action: Clean tank interior and perform final inspection. Make sure vent plugs are removed if applicable.		
3	46A00	Fuel Tanks, Integral	T.O. 1C-141B-2-28JG-00-1 S/S/SN, 28-00-24 step c
	Required Action: Take inventory of tools. Do not close tank until all tools have been located outside tank.		
4	46AAJ	Main Fuel Tank	T.O. 1C-141B-2-28JG-00-1 S/S/SN, 28-00-24 step a
	Required Action: When maintenance requires entry into the inboard section of number 1 and 4 main fuel tanks, inspect and clean fuel screen.		

Table A10.4. C-17

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	46AA0	Fuel Tank, Integral	T.O. 1C-17A-2-28JG-00-1 S/S/SN 28-00-02-2 step1
	Required Action: During fuel tank exit, perform foreign object damage (FOD) inspection. Inspect and inventory all tools and equipment to ensure no items have been left inside fuel tank.		

Table A10.5. C-5

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	46AA0	Dry Bay	T.O. 1C-5A-2-5, para 2-163 step b
	Required Action: Prior to dry bay panel access door installation, inspect all lines, clamps and couplings within the drybay for breaks, leaks or excessive wear.		
2	46AA0	Dry Bay	T.O. 1C-5A-2-5, para 2-163 step
	Required Action: Inspect all wiring and attaching hardware within the dry bay for breaks, fraying, kinks, missing/damaged insulation and routing. Repair/correct any defects found.		
3	46AA0	Dry Bay	T.O. 1C-5A-2-5, para 2-163 step
	Required Action: Inspect the wire mesh gasket on the dry bay access panel for damage. Replace damaged gasket if tear exceeds 50% of gasket width.		

Table A10.6. Munitions

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	ADZ4K ADZ5E	MHU-141/M Trailer Front and/or rear Wheel Bearing Assembly	Assembly: T.O. 35D3-2-27-1, page 6-11, para 6-26, step e (8) and page 4-2, para 4-10
	Perform during 720 day Periodic Inspections and as required during reassembly following maintenance/repair. Required Action: Ensure proper tightening of wheel bearing adjustment nut prior to installing cotter pin IAW para 4-10.		
2	ADZ45 ADZ5A	MHU-141/M Trailer Front/ Rear Brake Assembly	Assembly: T.O. 35D3-2-27-1, page 6-15, para 6-27, steps f (1-10) through g (1-3)
	Perform during brake reassembly following maintenance/repair. Required Action: Prior to installing hub and drum assembly on axle spindle inspect brake assembly for proper installation.		
3	AD641	MHU-110 Munitions Trailer Outer Wheels	T.O. 35D3-2-26-6WC-1, card 1-008 item 7 and T.O. 35D3-2-26-1, page 6-9, para 6-28 step e.
	Perform during Periodic inspection and as required during reassembly following maintenance/repair. Required Action: Before installing outer wheel, ensure the rim bolts and lug nuts have been torqued.		
4	ADZ45	MHU-110/M Munitions Trailer Front Brake Assembly	Inspect: T.O. 35D3-2-26-1, page 6-17, para 6-42 steps a through j.
	Perform during brake reassembly following maintenance/repair. Required Action: Prior to performing step 6-42k, installation of hub and drum assembly on axle spindle in accordance with para 6-34, inspect brake assembly for proper installation.		
5	ADZ5A	MHU-110/M Munitions Trailer Rear Brake Assembly	Inspect: T.O. 35D3-2-26-1, page 6-17, para 6-43 steps a through m.
	Perform during brake reassembly following maintenance/repair. Required Action: Prior to performing step 6-43n, installation of hub assembly on axle spindle in accordance with para 6-34, inspect brake assembly for proper installation.		
6	ADZ5E	MHU-110/MMunitions Trailer Rear Bearing Installation	Inspect: T.O. 35D3-2-26-1, page 6-12, para 6-35 steps a through j.
	Perform during Periodic inspection and as required during reassembly following maintenance/repair. Required Action: Ensure proper tightening of wheel bearing adjustment nut prior to installing cotter pin IAW para 4-10.		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
7	ADZ4K	MHU-110/M Munitions Trailer Front Bearing Installation	Inspect: T.O. 35D3-2-26-1, page 6-12, para 6-34 steps a through i.
	Perform during Periodic inspection and as required during reassembly following maintenance/repair. Required Action: Ensure proper tightening of wheel bearing adjustment nut prior to installing cotter pin IAW para 4-10.		
8	AGE00	MHU-194/E Molt Steering Wheel Brake	Assembly: T.O. 35D3-9-23-1, page 5-38, para 5-11.8.4, steps p through t.
	Perform during brake reassembly following maintenance/repair. Required Action: Prior to installing hub and drum assembly on rear axle spindle inspect brake assembly for proper installation.		
9	AGE00	MHU-194/E Molt Screw Assembly	Inspect: T.O. 35D3-9-23-1, page 5-3, table 5-1, item 4e; Assembly: T.O. 35D3-9-23-1 page 5-16, para 5-11.2.4, step bb through dd (12).
	Perform during 18 month Periodic Inspection and as required during reassembly following maintenance/repair. Required Action: Prior to reassembling screw assembly inspect screw for pits/galling and ensure ball nut assembly is properly assembled and lubed.		
10	AGE00	MHU-194/E Molt Steering Axle and Wheel Assembly	Assembly: T.O. 35D3-9-23-1, page 5-38, para 5-11.8.4 step z through aa.
	Perform during semi-annual/18 month Periodic Inspection and as required during reassembly following maintenance/repair. Required Action: Ensure proper tightening of castellated nuts and installation of cotter pins.		
11	AGE00	MHU-194/E Molt Load End Wheel and Hub Assembly	Assembly: T.O. 35D3-9-23-1, page 5-29, para 5-11.5.4 step f
	Perform during reassembly following maintenance/repair. Required Action: Ensure proper installation of castellated nuts and cotter pins.		

Table A10.7. Precision Guided Munitions

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	64A00/64B00	AGM-65/B Guidance Unit Dome Cover Actuator	Assembly: T.O. 21M-AGM65A-2, WP 070 00, page 12, para 6.1.4., step h
	Required Action: Ensure dome cover actuator connector 1P5(4) is connected to guidance unit connector 1J5.		
2	64A00/64B00	AGM-65/B Wiring Harness	Assembly: T.O. 21M-AGM65A-2, WP 070 00, page 22, para 6.1.14., step p
	Required Action: Ensure the harness connectors W1P1(1), 1P2(2), W1P3(3), and W1P7(8) Connect to GU connectors 1J1(1), 1J2(2), 1J3(3), and 1J5(8) respectively. Be sure cables do not dislodge or deform cable shield.		
3	64D00/64G00	AGM-65D/G Guidance unit Dome Cover Actuator	Assembly: T.O. 21M-AGM65D-2, page 6-6, para 6-6, step (h)
	Required Action: Connect dome cover actuator connector 1P5 (4) to GCS connector A3J1.		
4	64D00/64G00	AGM-65D/G Wiring Harness	Assembly: T.O. 21M-AGM65D-2, page 6-14, para 6-15, step (r)
	Required Action: Ensure the harness connectors W1P1(1), W1P2(2), W1P3(3), and W1P7(8) Connect to GCS connectors 1J1(1), 1J2(2), 1J3(3), and 1J5(8) respectively. Be sure cables do not dislodge or deform cable shield.		
5	41AAO	AIM-7/M Safe and Arm (S&A Cable)	Assembly: T.O. 21M-AIM7M-2, WP 008 00, page 35, para 81, step (e)
	Required Action: Ensure SA cable assembly connector P2 is connected and locked to connector J19 at aft end of guidance section.		
6	44AAA	AIM-9/M Target Detector Pre-formed Packing	Assembly: T.O. 21M-AIM9M-2, WP 008 00, page27, para 56(d) step (6)
	Required Action: Ensure the TD preformed packing is lubricated with a light coat of silicone compound and installed on the forward end of the TD prior to Guidance Control Section (GCS) installation.		
7	44AAB/65A99	AIM-9/M GCS, 9 Pin Connector	Assembly: T.O. 21M-AIM9M-2, WP00800, page 22, para 50 step (n)
	Required Action: Ensure connection of the GCS 9 pin connector to receptacle on forward end of TD, and screws are installed finger tight.		
8	52AB0	AGM-88B & C GSE Protective Cap	Assembly: T.O. 21M-AGM88C-2, WP 08000 page 16, para 5-1 step (d)
	Required Action: Ensure ground support equipment (GSE) protective cap and gasket are in place prior to installing GSE access cover. Ensure two captive screws are torqued to 72(+/- 8 inch-pounds).		

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
9	52AE0	AGM-88B&C Control Section Battery Cable/ Connector Gaskets	Assembly: T.O. 21M-AGM88C-2, SWP 070 03, page 10, para 8-13 step c. (7)
	Required Action: Ensure the control section battery jumper cable connector is installed and four captive screws are torqued to 40.0 +/- 4.0 inch-ounces.		
10	63FAF	AIM-7/M Tunnel Cable Installation	Assembly: T.O. 21M-AIM7M-2, WP 008 00, page 38, para 83, step (g)
	Required Action: Ensure the connector gaskets are in place on the tunnel cable prior to mating tunnel cable to missile. Ensure tunnel cable connectors (P23/P32 first, P22/P21 second, and P31/P33 last) are connected with corresponding connectors.		
11	65A99	AIM-9M Sealing Cap 15 Pin Connector	Assembly: T.O. 21M-AIM9M-2, WP008 00, p 27, para 56 (d) step (3).
	Required Action: Ensure sealing cap is installed on GCS 15 Pin connector prior to the installation on the target detector.		
12	11000	AGM-130C-9, 10, 11, 12; P60 Connector	Assembly: T.O. 21M-AGM-130-2 SWP 070 01 Page 19, para 3-12, step (M).
	Required Action: Ensure connector P60 of propulsion section is connected to J39 of ADU-573/B Adapter Section.		
13	11000	AGM-130C-9, 10, 11, 12; Fuse and Arming Lanyard	Assembly: T.O. 21M-AGM130-2 WP 070 01 pages 15-18, para 3.10, steps e,f,g, and l also para 3.11, step a.
	Required Action: Ensure proper fuse installation, fuse settings, and that electrical connector P18 is connected to the fuse connector. Ensure that lanyard snap hook is attached to fuse arming pin and that there is clearance between the lanyard snap hook and GPS coax cable.		

Table A10.8. MMS Armament Flight

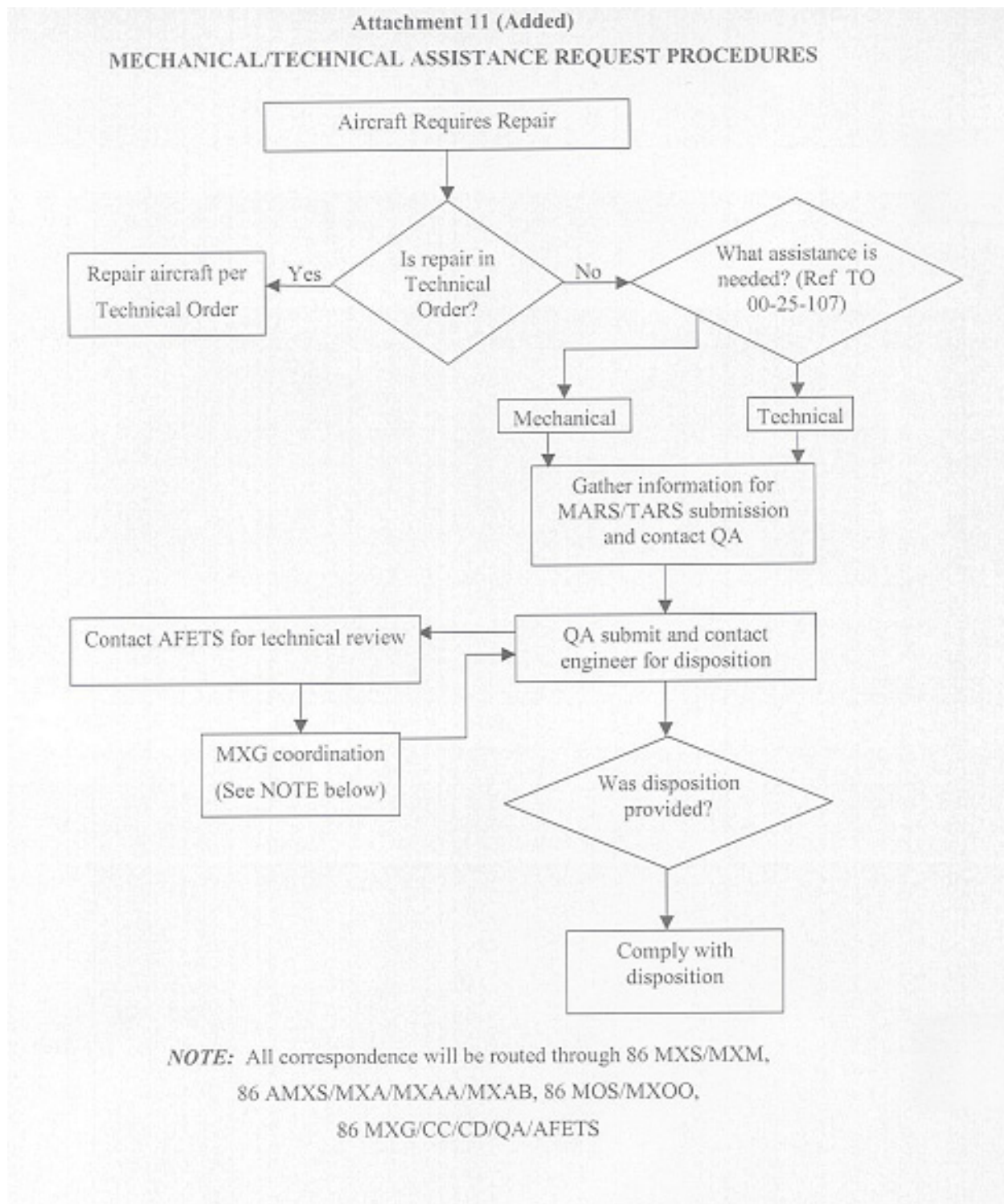
I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	75BH0	LAU-128 Launcher	T.O. 11L1-2-24-2, WP005-00, para 1 step by. thru ce.
	Required Action: Prior to installation of aft, center, and forward cover assemblies, ensure internal components/hardware are properly installed and perform foreign object check		
2	75DA0	SUU-59 Pylon	TO16W6-25-12 prior to para. 6-31
	Required Action: Prior to installation of access panels, inspect internal components for security, foreign objects and proper assembly.		
3	75DA0	BRU-47A	TO 11B29-3-61-2, para 6-53, step a (fig 6-8).
	Required Action: Prior to installation of top cover assembly, ensure internal components are properly installed, visually inspect wire harness for proper routing and perform foreign object check		
4	75FA0	MAU-12	T.O. 11B29-3-25-2, SWP 004-07, step 6, Fig 1
	Required Action: Prior to installation of left hand sideplate, inspect linkage and wiring for proper configuration		
5	75HD0	M61A1	T.O. .11W1-12-4-32, table 5-3, Rotor steps 1-22
	Required Action: Inspect rotor prior to lubrication for damage, proper safety wiring, and ensure components are properly installed prior to installation.		
6	75CKO	TER-9/A	T.O. 11B29-3-35-2, para 5-34, CAUTION prior to step b.
	Required Action Prior to installation of tray assembly, ensure the relay stud threads do not extend one thread beyond the nut to prevent grounding.		
7	75EBO	SUU-60/73 PYLON	TO 16W625-2 Prior to PARA. 6-33
	Required action: Prior to installation of access panels, inspect internal components for security, foreign objects and proper assembly.		

Table A10.9. Survival Equipment

I T E M	A	B	C
	WORK UNIT CODE	TASK	T.O. REFERENCE
1	PC000	Beacon, AN/URT-33CM Installation	T.O. 14D3-11-1, page 5-127 para. 5-16g, steps 1 through 12.
	Required Action: Ensure correct installation of AN/URT-33CM Emergency Radio Beacon and ensure beacon is turned on.		
2	PC000	Canopy suspension line continuity	T.O. 14D3-11-1, Page 11-28, para 11-8s, steps 1 through 5.
	Required Action: Ensure suspension lines and risers are not twisted or crossed and ensure proper arrangement on connector links.		
3	PC000	Canopy assembly locking stow	T.O. 14D3-11-1, Page 11-37, para 11-9c, steps 7 and 8.
	Required Action: Ensure locking stow extends 1 to 1 1/4 inches beyond the locking loops to minimize the possibility of premature unlocking of the quarter deployment bag.		
4	PC000	Canopy suspension line stowage	T.O. 14D3-11-1, Page 11-38, para 11-9d, steps 1 through 5
	Required Action: Ensure 18 to 24 inches of suspension line remain between the last stow and connector links, stows are neat without excess "spaghetti" and ensure all stowage flute tabs are the same or equal distance apart.		
5	PC000	Canopy thong safety tie	T.O. 14D3-11-1, Page 11-44, para 11-9g, steps 5 and 6.
	Required Action: Ensure canopy thong is inserted 1 to 1 1/4 inches into side flap closure cord loop and ensure safety tie is correct.		

Attachment 11 (Added)

A11.1. MECHANICAL/TECHNICAL ASSISTANCE REQUEST PROCEDURES



Attachment 12 (Added)

A12.1. TAS WORLDWIDE (WW) IDENTIFICATION (ID) (*NOTE:* Applicable to all Ramstein Air Base units)

A12.1.1. The following table shows the current list of TAS WW ID for units assigned to Ramstein Air Base.

A12.1.2. All units at Ramstein Air Base will use “RF” as the first two characters in the WW ID.

A12.1.3. The third character of the WW ID will be used to identify the UNIT and the fourth will be used to represent the SECTION/WORK CENTER.

86th Airlift Wing Units			
86th Maintenance Group Units			
86th Maintenance Squadron		86th Aircraft Maintenance Squadron	
Maintenance Flight	RF8M	37 Aircraft Maintenance Unit	
Fabrication	RF8F	Support Section	RF3M
Propulsion	RF8P		
Accessories	RF8C		
TMDE	RF8D		
Avionics	RF8A		
86th Airlift Wing Units (Continued)			
86th Maintenance Group Units			
AGE	RF8G	76th Aircraft Maintenance Unit	
Transit Alert	RF8T	Maintenance	RF7M
86th Maintenance Group Quality Assurance			
QA	RF8Q		
86th Operations Group Units			
37th Airlift Squadron		76th Airlift Squadron	
Life Support	RF3L	Life Support	RF7L
Loadmasters	RF3D		
DET 1 309 AS			
Maintenance/ TA	RF8U		
Support	RF8S		

86th Air Mobility Squadron			
Support Section	RF8X		
Vehicle Maintenance	RF8Y		
435th Air Base Wing			
435th Logistics Readiness Group			
435 th Materiel Maintenance Squadron		435th Vehicle Readiness Squadron	
AGE	RFMG	Vehicle Maintenance	RF8V
Armament	RFMW	435th Logistics Readiness Squadron	
Electro-Environmental	RFME	Fuels Compliance	RF8L
435th Munitions Squadron			
Munitions	RF8W		
	RF8R		
435th Communications Group			
435th Communications Squadron			
SCMOT	RF8H		
86th Airlift Wing Units(Continued)			
86th Maintenance Group Units			
SCMOF	RF8J		
SCWC	RF8K		
Ramstein Air Base Tenant Units			
723d Air Mobility Squadron			
Support Section	RFAM		
Vehicle Maintenance	RF8V		

Attachment 13 (Added)**A13.1. Aircraft Hangaring Checklist**

Aircraft tail number _____

1. Hangar checked and clear of Foreign Objects (FO) prior to towing in.
2. Ensure chaff/flares downloaded prior to towing aircraft in.
3. Snatch cables or tow bar connected to aircraft.
4. Aircraft statically grounded.
5. Drip pans positioned as required.
6. C-130: Aircraft and SCNS batteries disconnected. C-9: Aircraft battery.
7. If utilizing AGE power unit for electrical power, ensure cable guard is installed over cable or that the doors the cable runs through are left open.
8. Position fire extinguishers as applicable.
9. Close main hangar doors.
10. C-130: Oxygen shutoff valve (FS 245) closed.

Date/time aircraft towed in _____

Tow supervisor's name/rank/employee # _____

Attachment 14 (Added)

A14.1. Repair and Reclamation Responsibilities

Table A14.1. C-130 RR/Flight Line Tasks

DISCREPANCY	RR	FLT LINE	REMARKS
Crew Entrance Door			
Remove/Replace	Yes	No	NOTE: Flight line replace cable, pulley, negator spring, telescoping rod, jettison brackets, and seal
Remove/Reinstall	Yes	Yes	
Rig/Adjustment	Yes	No	
Troop Doors			
Remove/Replace	No	Yes	
Adjustment/Rig	No	Yes	
Escape Hatches			
Remove/Replace	No	Yes	
Adjustment/Rig	No	Yes	
Life Raft			
Remove/Replace, Rig/Adjust Cables	No	Yes	
Main Landing Gear Doors			
Remove/Replace	No	Yes	
Rig/Adjustment	Yes	No	
Nose Landing Gear Doors			
Remove/Replace	Yes	No	Flight line lower/raise forward door
Rig/Adjustment	Yes	No	
Cargo Ramp/Door			
Remove/Replace	Yes	No	Flight line remove/replace seals
Rig/Adjustment	Yes	Yes	Flight line hydraulic technician--remove/replace, rig ramp and door actuators
Ground Checkout/Test Valve			
Remove/Replace	No	Yes	
Rig/Adjustment	Yes	Yes	Hydraulic technician rigs control cables when replacing valve
Aircraft Jacking			
Raise and Lower	No	Yes	RR can assist on jacking

DISCREPANCY	RR	FLT LINE	REMARKS
Weight/Balance	No	Yes	
Cribbing	Yes	No	
Booster Assembly Aileron, Elevator, and Rudder			
Remove/Replace	No	Yes	Hydraulic technician
Gust Locks	Yes	Yes	
Cable Rig	Yes	No	Guidance and Control (GAC) technician rigs autopilot
Operational Checks	Yes	Yes	Hydraulic and GAC technicians
Cable Block	Yes	No	
Adjustment/Rig	No	Yes	
Flight Control Surfaces and Tabs Aileron, Rudder, Elevator and Flap			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Troubleshoot	Yes	Yes	
Aileron, Elevator, Rudder, Flap Control Cables and Cranks, and Sectors	No	Yes	
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Aileron, Elevator, Rudder, and Flap-Torque Tubes, Pushrods, and Tension Regulators	Yes	No	
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Control Wheels/Control Column			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Throttle and Condition Lever Regulators and Cables			
Ground Checkout/Test Valve			
Remove/Replace	Yes	No	From column to engine firewall
Rig/Adjustment	Yes	No	From column to engine firewall

DISCREPANCY	RR	FLT LINE	REMARKS
Throttle Detent Springs			
Raise and Lower	Yes	No	
Weight/Balance	Yes	No	
Throttle Control System Mechanical			
Operational Checkout	Yes	Yes	RR, Propulsion, E/E, Crew Chief
Troubleshooting	Yes	Yes	RR, Propulsion, E/E, Crew Chief
Switch Adjustment	No	Yes	E/E technicians
Forward/Aft Service Entrance Door			
Remove/Replace	Yes	No	
Rig	Yes	No	
Forward/Aft Entrance Stair			
Remove/Replace	No	Yes	
Rig	Yes	No	
Exit Doors Emergency/Over-wing Hatch			
Remove/Replace	No	Yes	
Rig	No	Yes	
Forward/Aft Cargo Lower Compartment Door			
Remove/Replace	Yes	No	
Rig	Yes	No	
Forward Upper Cargo Door			
Remove/Replace	Yes	No	
Rig	Yes	No	
Patient Loading Ramp			
Remove/Replace	Yes	No	
Rig	Yes	No	
Steering System	Yes	No	
Remove/Replace	Yes	No	
Rig	Yes	No	
Nose/Main Landing Gear Inner Strut			
Remove/Replace	No	Yes	
Rig/Adjustment	Yes	No	

DISCREPANCY	RR	FLT LINE	REMARKS
Service	No	Yes	
Doors, Main Gear	Yes	No	
Remove/Replace	No	Yes	
Rig/Adjustment	No	Yes	
Doors, Nose gear			
Remove/Replace	No	Yes	
Rig	No	Yes	
Door, Main Landing Gear Strut			
Remove/Replace	Yes	No	
Rig	Yes	No	
Main Gear Door Latch Mechanism/Roller Bracket			
Remove/Replace	Yes	No	Hydraulic remove/replace latch cylinder
Rig	Yes	No	Hydraulic rigs latch cylinder
Wheel Brake Control System Mechanical/Cables			
Remove/Replace	Yes	No	
Rig	Yes	No	RR--Only to brake control valve
Remove/Replace	Yes	No	
Rig	Yes	No	
Cables, Landing Gear Mechanical Control			
Remove/Replace	Yes	No	Flight line replaces parking brake cable and bypass lever cable
Rig	Yes	No	
Extension/Retract Landing Gear			
Adjustment/Test	Yes	Yes	RR, hydraulic, E/E, crew chief
Troubleshooting	Yes	Yes	RR, hydraulic, E/E, crew chief
Ground Shift Mechanism			
Remove/Replace	Yes	No	
Rig	Yes	No	
Cable, Pedal Steering Override Mechanism			
Remove/Replace	Yes	No	

DISCREPANCY	RR	FLT LINE	REMARKS
Adjustment/Test	Yes	No	
Aileron, Elevator, Rudder, Spoiler, Control Surfaces, and Control Tabs	No	Yes	
Remove/Replace	Yes	No	
Rig/ Adjustment	Yes	No	
Aileron, Elevator, Rudder, and Flap-Torque Tubes, Pushrods, and Tension Regulators	Yes	No	
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Control Wheels/Control Column			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Throttle and Condition Lever Regulators and Cables			
Ground Checkout/Test Valve			
Remove/Replace	Yes	No	From column to engine firewall
Rig/Adjustment	Yes	No	From column to engine firewall
Throttle Detent Springs			
Raise and Lower	Yes	No	
Weight/Balance	Yes	No	
Throttle Control System Mechanical			
Operational Checkout	Yes	Yes	RR, Propulsion, E/E, Crew Chief
Troubleshooting	Yes	Yes	RR, Propulsion, E/E, Crew Chief
Switch Adjustment	No	Yes	E/E technicians

Table A14.2. C-9 RR/Flight Line Tasks

DISCREPANCY	RR	FLT LINE	REMARKS
Forward/Aft Service Entrance Door			
Remove/Replace	Yes	No	
Rig	Yes	No	
Forward/Aft Entrance Stair			
Remove/Replace	No	Yes	
Rig	Yes	No	
Exit Doors Emergency/Over-wing Hatch			
Remove/Replace	No	Yes	
Rig	No	Yes	
Forward/Aft Cargo Lower Compartment Door			
Remove/Replace	Yes	No	
Rig	Yes	No	
Forward Upper Cargo Door			
Remove/Replace	Yes	No	
Rig	Yes	No	
Patient Loading Ramp			
Remove/Replace	Yes	No	
Rig	Yes	No	
Steering System	Yes	No	
Remove/Replace	Yes	No	
Rig	Yes	No	
Nose/Main Landing Gear Inner Strut			
Remove/Replace	No	Yes	
Rig/Adjustment	Yes	No	
Service	No	Yes	
Doors, Main Gear	Yes	No	
Remove/Replace	No	Yes	
Rig/Adjustment	No	Yes	
Doors, Nose gear			

DISCREPANCY	RR	FLT LINE	REMARKS
Remove/Replace	No	Yes	
Rig	No	Yes	
Door, Main Landing Gear Strut			
Remove/Replace	Yes	No	
Rig	Yes	No	
Main Gear Door Latch Mechanism/Roller Bracket			
Remove/Replace	Yes	No	Hydraulic remove/replace latch cylinder
Rig	Yes	No	Hydraulic rigs latch cylinder
Wheel Brake Control System Mechanical/Cables			
Remove/Replace	Yes	No	
Rig	Yes	No	RR--Only to brake control valve
Remove/Replace	Yes	No	
Rig	Yes	No	
Cables, Landing Gear Mechanical Control			
Remove/Replace	Yes	No	Flight line replaces parking brake cable and bypass lever cable
Rig	Yes	No	
Extension/Retract Landing Gear			
Adjustment/Test	Yes	Yes	RR, hydraulic, E/E, crew chief
Troubleshooting	Yes	Yes	RR, hydraulic, E/E, crew chief
Ground Shift Mechanism			
Remove/Replace	Yes	No	
Rig	Yes	No	
Cable, Pedal Steering Override Mechanism			
Remove/Replace	Yes	No	
Adjustment/Test	Yes	No	
Aileron, Elevator, Rudder, Spoiler, Control Surfaces, and Control Tabs	No	Yes	

DISCREPANCY	RR	FLT LINE	REMARKS
Remove/Replace	Yes	No	
Rig/ Adjustment	Yes	No	
Aileron, Elevator, Rudder, Spoiler/Speedbrake Control Cables/Cranks/Sectors			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Autopilot Components			
Yaw Dampner Actuator			
Remove/Replace	No	Yes	
Rig	Yes	No	RR--Only to brake control valve
Mach trim Actuator			
Remove/Replace	No	Yes	
Rig	Yes	No	
Aileron Servo			
Remove/Replace	No	Yes	
Cable Remove and Replace/ Adjust	Yes	No	
Elevator Servo			
Remove/Replace	No	Yes	
Cable Remove and Replace Adjust	Yes	No	
Leading Edge Slats			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	Yes	
Flap Surface and Flap Movable Vane/Flap Bus Cable and Follow-up Cable			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Flap Fixed Vane			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	

DISCREPANCY	RR	FLT LINE	REMARKS
Thrust Reverser and Throttle Cables			
Remove/Replace	Yes	No	RR replaces cables from cockpit to the Aft bulkhead sector only
Rig/ Adjustment	Yes	No	RR replaces cables from cockpit to the Aft bulkhead sector only
Handle, Fire Control			
Remove/Replace	No	Yes	
Adjustment/Test	No	Yes	
Shutoff System, Fuel			
Remove/Replace	No	Yes	
Rig/Adjustment	No	Yes	Flight line may require assistance
Shutdown, Emergency			
Remove/Replace	No	Yes	
Rig/Adjustment	No	Yes	Flight line may require assistance
Lever, Support Shaft			
Remove/Replace	Yes	No	
Rig/Adjustment	Yes	No	
Fuselage Throttle Cable System Adjustment/Test			
Test	Yes	Yes	
Adjustment	Yes	No	
Outflow Valve Cable			
Remove/Replace	No	Yes	
Rig	No	Yes	Flight line may require assistance
Main Landing Gear/Nose Landing Gear			
Remove/Replace	Yes	No	Flight line hydraulic technician, electrician, and crew chief assist
Rig/Adjustment	Yes	No	RR--Remove/replace cables, cranks, and linkages
Operational Checks and Gear Retraction Checks	Yes	Yes	NOTE: Operational checks/retraction also performed by flight line hydraulic and E/E technicians
Troubleshooting	Yes	Yes	All applicable shops

DISCREPANCY	RR	FLT LINE	REMARKS
Switch Adjustment	No	Yes	E/E

Attachment 15 (Added)**A15.1. Manual Job Control Numbers****Table A15.1.**

86th Maintenance Operations Squadron	
CAMS Assigned	0001-2000
86th MXG Quality Assurance	2001-2099
Time Compliance T.O. Monitor	2100-2199
Time Change Monitor	2200-2299
Other Maintenance	2300-2399
Reserved For Future Use	2421-2799
Field Training Detachment	2800-2810
Engine Management	4800-4899
86 Aircraft Maintenance Squadron	
37 Aircraft Maintenance Unit	
Plans and Scheduling	3000-3099
Debrief	3100-3199
Red Ball	3200-3299
Sortie Generation Flight	3300-3529
Sortie Support Flight	3530-3729
Alternate Mission Equipment	3730-3779
Reserved For Future Use	3860-3999
76 Aircraft Maintenance Unit	
Plans and Scheduling	4000-4049
Debrief	4050-4099
Sortie Generation Flight	4100-4399
Alternate Mission Equipment	4400-4449
86th Maintenance Squadron	
ISO and Inspection Dock (Shop Equipment and Miscellaneous work)	2400-2420
ISO Fix-phase discrepancies	_001-_500 (Use alpha character in front)
Avionics Flight	
COM and NAV Shop	5000-5049

Guidance and Control	5050-5099
Accessory Maintenance Flight	
Pneudraulics	5100-5149
Electric and Environmental Shop (Battery)	5150-5199
Fuel Systems Shop	Fuel Systems Shop
Fabrication Flight	
Metal Tech Shop	5300-5349
Non-destructive Inspection (NDI) Lab	5350-5399
Structural Repair	5400-5449
Survival Shop	5450-5499
Paint Barn	5500-5539
Maintenance Flight	
Aerospace Repair Shop	5600-5649
Wheel and Tire	5650-5699
Transient Alert	5700-5799
Propulsion Flight	
T56-15/A7B	6000-6099
Material Support or Maintenance Supply Liaison (MSL)	6100-6149
Engine Test Cell	6150-6199
Propeller Shop	6200-6249
Propulsion Shop	6250-6299
AGE Flight	
Production Control	6000-6649
86 CAT (Shop Equipment and Miscellaneous work)	6650-6699
Periodic Inspection (Powered and Non-Powered)	N/A
Fix-phase discrepancies (Digits 7-9)	501- _530 (Use alpha character in front)
C-130 CAT (HERC AGE) (Shop Equipment and Miscellaneous work)	6700-6749
Periodic Inspection (Powered and Non-Powered)	N/A
Fix-phase discrepancies (Digits 7-9)	_531- _560 (Use alpha character in front)

AMC CAT (Shop Equipment and Miscellaneous work)	6750-6799
Periodic Inspection (Powered and Non-Powered)	N/A
Fix-phase discrepancies (Digits 7-9)	_561-_590 (Use alpha character in front)
Munitions Flight	
Munitions Control	6800-6899
Test Measurement and Diagnostic Equipment Flight (TMDE)	6900-7050
86 OG	
Det. 1, 86 OG Chievres AB, Belgium	7051-7199

Attachment 16 (Added)**A16.1. WING FOD PREVENTION COMMITTEE MEMBERS****Table A16.1. Wing FOD Prevention Committee Members.**

1. 86th Airlift Wing Vice Commander	(Chairperson)
2. 86th Operations Group Commander	(Co-chairperson)
3. 86th Maintenance Group Commander	(Co-chairperson)
4. 86th Contingency Response Group Commander	(Co-chairperson)
5. 435th Logistics Readiness Group Commander	(Co-chairperson)
6. 86th Aircraft Maintenance Squadron Commander/ Representative	(Member)
7. 37th Aircraft Maintenance Unit OIC/NCOIC/Representative	(Member)
8. 76th Aircraft Maintenance Unit OIC/NCOIC/Representative	(Member)
9. 76th Aircraft Maintenance Unit QAR	(Member)
10. 86th Airlift Wing Safety	(Member)
11. 86th Maintenance Group QA	(Member)
12. 435th Vehicle Readiness Squadron Commander/ Representative	(Member)
13. 435th Communications Squadron Commander/ Representative	(Member)
14. 86th Maintenance Squadron Commander/ Representative	(Member)
15. 86th Operations Support Squadron (Airfield Man.)	(Member)
16. 435th Logistics Readiness Squadron Commander/ Representative	(Member)
17. 86th Air Mobility Squadron	(Member)
18. 568th Security Forces Flight Commander/Representative	(Member)
19. 723d Air Mobility Squadron	(Member)
20. 786th Civil Engineering Squadron Commander/ Representative	(Member)

Attachment 17 (Added)**A17.1. MEMORANDUM LETTER****Attachment 17 (Added)**

MEMORANDUM FOR MXG/QA TODO

Date

FROM: (Your Office Symbol)

SUBJECT: TO Monitors for Account F*12B2-XX

The following individuals are designated as TO monitors for (your work center):

Position	Rank/ Name	Security Clearance	DEROS	Date Trained	Bldg #	Phone
Primary						
Alternate						

(Section/Flight Chief Signature Block here)

Attachment 18 (Added)

A18.1. LMR Callsigns

86th Operations Group	
Commander	Ops 1
Deputy Commander	Ops 2
86th Maintenance Group	
Commander	Maintenance 1
Deputy Commander	Maintenance 2
Chief Enlisted Manager	Maintenance 3
Quality Assurance	QA 1-6
37th Airlift Squadron	
Commander	Blue Tail 1
DO	Blue Tail 2
Operations Desk	Blue Tail Ops
86th AMXS	
Commander	Blue Knight
Maintenance Operations Officer	Blue Lead
Maintenance Superintendent	Blue Super
37th AMU	
Flight Commander	Herk Boss 1
Flight Chief	Herk Boss 2
Lead Production Superintendent	Herk Lead
Production Superintendent	Herk Super
Flightline Expediter	Herk 1
Flightline Expediter	Herk 2
Specialist Expediter	Herk 3
Contingency Use	Herk 4
Contingency Use	Herk 5
ECM Element Chief	Raven Base
37 AMU (Continued)	
ECM Technicians	Raven 1
ECM Technicians	Raven 2
37th AMU (Sortie Support Flight)	

Flight Commander	Support Boss
Flight Chief	Support Chief
CTK Element	Support 1
-21 Dual Rails Element	Support 2
Supply Support	Support 3
76 AMU (C-9)	
OIC/Superintendent	DV 1
Production Superintendent	DV 2
Expeditor	DV 3
76th Airlift Squadron	
Commander	OSA 1
Operations Officer	OSA 2
Quality Assurance Representative	QAR
C-20 Maintenance	M7
C-21 Maintenance	Vertex
'Delta'	
Commander	Delta 1
Maintenance Superintendent	Delta 2
Maintenance Officer	Delta Boss
Maintenance Superintendent	Delta Chief
Production Superintendent	Delta Super
Flightline Superintendent	Delta 3
Production Superintendent Ramp 1	Delta 4
Production Superintendent Ramp 2	Delta 5
Expeditor Ramp 1	Delta 6

A18.1. LMR Callsigns (Continued)

‘Delta’ (Continued)	
Expeditor Ramp 9	Delta 7
Specialist Truck	Delta 8
Engine Technicians	Delta 9
ECM Technicians	Delta Raven
AGE	Delta Kilo
Supply	Delta Supply
MOC	Delta MOC
86th Maintenance Squadron	
Commander	Big Dog 1
Maintenance Superintendent	Big Dog 2
Chief Production Superintendent	Big Dog 3
Production Superintendent	MS Super
Maintenance Flight	
Crash Recovery	Recovery 1
Transient Alert Dispatch	TA
Transient Alert Vehicles	TA 1-3
Transient Alert Follow-me	Follow Me
AERO Repair Base	AR Base
AERO Repair Truck	AR 1 or 2
ISO Base	ISO Base
ISO ‘Backline’	ISO 1or 2
AGE Flight	
AGE Office (Nets 4 or 5)	AGE Dispatch
AGE Ramps 5,5A, TXY ‘E’ and ‘F’ (Net 4)	AGE 1
AGE Ramps 1,2,3,4 and 6 (Net 5)	AGE 2
AGE Ramps 7 and 8, LOX and E/E (Net 5)	AGE 3
AGE for non- routine requirements (Net 5)	AGE 4
Avionics Flight	Avionics
Accessory Flight	
86th Maintenance Squadron (continued)	
Fuels Shop	Fuels Base
Fuels Technicians	Fuels 1 or 2
Electric/Environmental	Electrics 1 or 2

Hydraulics	Hydraulics
Propulsion Flight	
Test Facility and Hush House	Hush House 1 or 2
PMEL	
PMEL Truck	PMEL 1 or 2
Munitions Flight	
Flight Commander	Eagle 1
Flight Chief	Ammo 1
Material Section OIC	Ammo 2
Material Section NCOIC	Ammo 3
Production Section OIC	Ammo 4
Production Section NCOIC	Ammo 5
Systems Section OIC	Ammo 6
Systems Section NCOIC	Ammo 7
Weapons Section OIC	Ammo 8
Weapons Section NCOIC	Ammo 9
Munitions Control (Primary)	Viper
Munitions Control (Alternate)	Shadow
Munitions Maintenance Personnel	Phoenix (1-39)
Munitions Maintenance Dispatch	Phoenix Nest
Equipment Maintenance Personnel	Wolf (1-9)
Munitions Storage Personnel	Cougar (1-53)
Munitions Storage Dispatch	Cougar Den
Operations Personnel	Gator (1-16)
Weapons Maintenance Crews	Bear (1-10)
86th Maintenance Squadron (continued)	
Weapons Maintenance Superintendent	Bear Super
Vault Maintenance Crews	Goose (1-6)
Vault Maintenance Superintendent	Goose Super
Munitions Training Personnel	Bulldog (1-5)
Munitions Inspection Personnel	Badger (1-20)
NOCM Personnel	NOCM (1-6)
Fabrication Flight	
Fabrication Super	FAB 1
Structural Repair Shop	Sheet Metal Base
Structural Repair	Sheet Metal 1-2

Metals Technology	Metals Tech
Non-Destructive Inspection Shop	NDI Base
Non-Destructive Inspection Technicians	NDI

Attachment 19 (Added)**A19.1. FCF/OCF “Official Notification”**

The 86 OG/OGV FCF Program Managers **MUST** be notified **72** hours prior of all FCF, ACF, and OCF missions. Notifications less than 72 hours prior to flight must be due to valid operational requirements and/or unforeseen circumstances (include specific reasons). E-mail (FAX if necessary 480-5454) the information on the “Official Format” below to: 86 OG/OGV OIC/PM, 86 OG/OGV OIC/Alt PM, 86 MXG/QA PM, 86MXG/QA Alt PM, applicable QA/QAR representatives. Also courtesy copy 86 OG/OGV Division Chief, appropriate flight scheduler and Squadron DO. Call DSN 480-5934/5935 for “86 OG/OGV” and 480-2444 for “MXG/QA” to confirm receipt of the e-mail/fax. If the receipt of the e-mail/fax cannot be confirmed or it is after duty hours, call 86 AW Command Post and have them page the Group On-Call (GOC) Evaluator with a request for the GOC to call you/POC. Pass all the following information to the GOC Evaluator and he/she will then brief the OG/CC ASAP. **NOTE:** Any timeline or profile changes (e.g. weather or maintenance slip, FCF training or engine shutdowns added) require update notification via the same process. Please ensure that an appropriate “high-speed taxi check checklist” has been developed according to AFI 21-101, AFI21-101_USAFESUP1, AFI21-101_RAMSTEINSUP1, applicable T.O.’s and AFI series instructions.

Squadron:**Type Aircraft:****Tail Number:****Date Primary:****Date Secondary (alternate date):****T/O Time: (Zulu)****Duration:****Purpose: (explain)****FCF Training? YES / NO****Engine Shutdown planned? YES / NO****High-Speed Taxi Check planned? YES / NO****Aircraft Commander:****Flight Engineer:****Location of FCF:****Location and Time of QA/QAR Brief:****Reason for Late Notification (if applicable):**

ERWIN F. LESSEL III, Brigadier General, USAF
Commander